

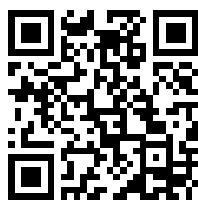


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3-PRV  
Heil











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**PRICE, \$2.00**

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CATALOGUE NO. 2548

TO Prof. I. D. Cardiff  
Columbia University  
New York City

WITH COMPLIMENTS OF

**HENRY HEIL CHEMICAL CO.**

**ST. LOUIS.**

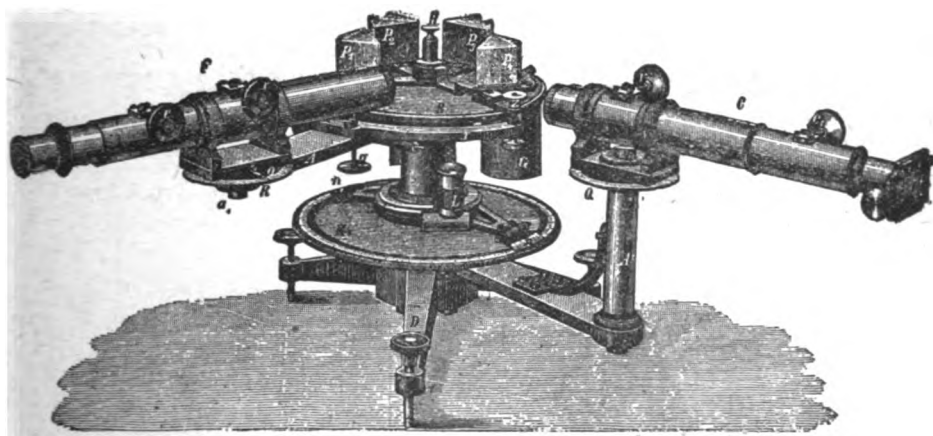
ESTABLISHED 1866.

INCORPORATED 1888.

ILLUSTRATED  
CATALOGUE AND PRICE-LIST  
OF  
**CHEMICAL APPARATUS**

AND

INSTRUMENTS FOR CHEMICAL AND BACTERIOLOGICAL LABORATORIES, CHEMISTS, IRON AND STEEL WORKS, SMELTERS, ASSAYERS, MINES, SUGAR REFINERIES, SCHOOLS, COLLEGES, UNIVERSITIES, ETC.



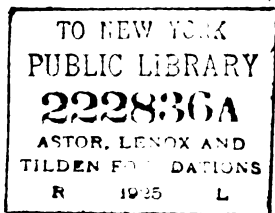
MANUFACTURED AND IMPORTED BY

**HENRY HEIL CHEMICAL COMPANY,**

212-214 SOUTH FOURTH STREET,

ST. LOUIS, MO.





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# PREFACE.

In presenting this Catalogue to our patrons and friends, we feel confident that it will be found *the most complete and best arranged work of its kind* ever issued in this country, and that it will prove a valuable book of reference. Although containing a vast variety of apparatus, it is so arranged that any item can be readily found by referring to the index, in which every article is registered by its various names.

*This Catalogue and its prices supersede all former issues.*

We take pleasure to state, that *we have reduced our net prices* in most instances, not by lowering the quality of our goods, but by manufacturing on a more extensive scale, and by importing in larger quantities, while *the same high standard of quality furnished by us hitherto* has been maintained, and in many cases been improved upon.

*Our prices are subject to discounts, and we feel sure that our net prices will be found lower than those of any other house in this country.* We invite careful comparisons, but suggest that in all such cases, *goods of the same high grade as ours* should only be compared. *We guarantee to furnish all goods at the lowest possible prices,* consistent with first-class workmanship and quality.

It is now twenty-five years since our establishment was founded, and, looking back, we feel proud of having built up, by fair dealing and strict attention to the interests of our customers, a trade in our line of business not equaled by that of any other house in this country, although we are not located in the American Metropolis. We have received hundreds of unsolicited letters, in which our patrons and friends have expressed their appreciation of our business methods and way of dealing, and we take this occasion to thank them for their kindness and good will, and to assure them that it will ever be our effort and desire to give them satisfaction, and to make our business relations as agreeable in the future as in the past.

As heretofore, we are *importing direct from the most renowned factories in Europe* all such goods which cannot be manufactured to advantage in this country, while we have greatly *increased our manufacturing facilities* for the other goods.

For chemicals we refer to our special Chemical-List, covering 63 pages. We also beg to call attention to our

*Hammered Platinum Ware,*

*Filtering-Paper,*

*Porcelain Evaporating Dishes, Crucibles, Etc. Scorfiers,*

*Metal Goods,*

*Clay and Sand Crucibles,*

*Microscopes, Cover Glass, Etc.*

*Bohemian Glassware,*

*Graduated Glassware,*

*Balances and Weights, Etc.,*

*Nickel Ware,*

*Combustion Tubing,*

*Bacteriological Apparatus,*

*Chemicals,*

*Strictly Chemically Pure Acids,*

*Manufactures of Wood,*

*Horn and Bone Goods,*

the quality of which, for workmanship and material, we guarantee not to be excelled by any other make. *We do not handle second grade goods.*

All our glassware for boiling purposes is made of special resistance glass. The filtering-paper from the famous J. H. Munktell's factory, which we represent, we offer at more reasonable rates than any other paper of similar quality is sold at, calling attention at the same time to its superiority over any other filtering-paper, and its adaptation for qualitative and quantitative analysis in its various grades, and requesting those of our patrons to give it a trial who have not yet used it, so as to convince them that it is not equaled by any other filtering-paper made.

Our stock is constantly increasing in quantity and variety, and it will be a source of pleasure to us to have our customers call and examine it, and to give us an opportunity to show them our extensive establishment and unlimited facilities, by which we are enabled to fill orders more promptly than any other house.

Whether the orders are large or small they always find the same careful and speedy attention.

As manufacturers and direct importers we know that no other house can do better than we on any goods, without supplying a lower grade.

We can furnish glass apparatus, however complicated, in a short time, according to drawing and description, but in such cases it will be understood that any apparatus manufactured by us in this way, can, under no circumstances, be returned to us.

We have added a large number of physical apparatus to our list, which we furnish at manufacturers' prices, so as to enable our customers to buy their chemical and physical apparatus from one house, as this is obviously an advantage to schools and colleges.

In the selection of our stock we are assisted by our agents in Paris, Berlin and Hamburg, so that Professors and Teachers will find our stock fully up with the advancement of science to the present day.

We call attention to our chemically pure acids, in which we have probably a larger trade than any other firm, and we wish to state that in quality they are fully equal to any acids being sold as "strictly c. p." and other similar terms. We can offer them at very low prices because we manufacture them in enormous quantities.

Special attention is called to the sets of chemical, physical and blow-pipe apparatus, assayers' outfits, apparatus for urinary analysis and sugar analysis, electro-silver-plating and nickel-plating, contained in the appendix.

Our platinum ware is all hammered and of superior quality, and can always be relied upon.

Schools, colleges, universities and scientific institutions are permitted by Act of Congress, to have all apparatus, instruments, books, etc., intended for their own use and not for sale, imported free of duty, and we offer our services to them for that purpose, having the best facilities for attending to these orders promptly and for filling them at the original prices of European houses. While calling attention to the benefit of duty free importation, we wish to mention the fact, that it is only of advantage to import free of duty when pretty large quantities are wanted, since very small quantities cannot be bought from European manufacturers, but must be filled by dealers, who naturally charge an advance on the goods, and because the expense of shipping, custom house fees, etc., etc., on small lots are proportionately much higher than on large quantities, thus making small lots cost about as much as if bought from our stock, duty paid. It should also be remembered that when goods are to be bought in Europe, the order should be sent out from three to five months before the goods are needed, to insure their delivery here at the proper time. Very expensive apparatus can be sent by express at a slight advance and can, of course, be brought over very much quicker than the general line of apparatus, the price of which does not bear the heavy expense of expressage. We shall take pleasure to furnish European catalogues for working out import orders upon application, and we assure our patrons that such orders entrusted to us will receive the most careful and prompt attention.

In a few items in our present catalogue we have given two prices, one for the article duty paid, and one for duty free importations.

We make a specialty of exporting goods to Mexico, Central and South America, China, Japan, the Sandwich Islands and other foreign countries.

Employing only experienced men in packing goods, the greatest possible care is always taken to guard against breakage, but our responsibility ends with the delivery of goods in good order to the public carrier. With the greatest precaution in packing, rough handling of the packages on the railroad or express may lead to loss, against which we can, if desired, insure, at from two to five per cent. premium, according to the nature of the goods, but only when they amount to \$25.00 or more. Packing boxes and casks will be charged at reasonable rates.

Any article not in our line will be bought for our customers, but, having been purchased on special order, they cannot be taken back.

We can furnish laboratory fittings, shelvings, etc., at reasonable rates, and shall gladly furnish estimates of cost on receipt of concise drawings and specifications.

Parties not known to us, when ordering, are requested to give satisfactory references or to send in the cash, and, if they wish to have goods sent C. O. D., the order should be accompanied by a remittance sufficient to cover expressage both ways.

All prices are for quantities stated. In ordering less a proportionate advance will be charged, while for larger quantities a reduction may be made.

All bills are payable in St. Louis or New York funds, otherwise the customary exchange will be charged.

To avoid mistakes the catalogue number should be given for each item ordered.

As the compiling of this catalogue has entailed a vast amount of labor and has cost a great deal of money (upwards of \$7,000.00), we make a charge of \$2.00 for each copy, which will be refunded upon receipt of the first order amounting to \$25.00 or more. \*We also reserve the right to recall this catalogue, as we may deem proper.

Acknowledgment of receipt of this catalogue is requested as a favor to us.

In conclusion, we beg to extend our sincere thanks to our customers and friends for their liberal patronage and to express to them our high appreciation of past favors, and we hope to deserve in future their kind support and good will by honorable dealing and close attention to their interests.

Very respectfully,

HENRY HEIL CHEMICAL CO.,

St. Louis, August 1, 1891.





## PREFACE.



Referring to the preface of our last catalogue of 1891, we take pleasure in presenting to our patrons and friends our new revised and enlarged catalogue, the prices of which supersede all former printed quotations. It will be observed, that we have added a large number of articles and that our net prices throughout compare favorably with those of any other house.

On account of the addition of a great number of articles, we have found it advisable to separate the physical apparatus, for which we now issue a separate catalogue, to which we refer our patrons for these goods.

All goods having an "I" in front of their respective numbers are not kept in stock as a rule, but are imported to order.

Measurements and capacities are given in the metric system in this catalogue.

We call particular attention to our *Bohemian Normal Glassware*, specially manufactured for us according to our own formulas. This glass is surpassing all other known glass in resistance to changes of temperature and the corrosive action of chemical compounds. We guarantee it to be *superior in every respect to any other glassware*, and invite the chemical profession to subject it to the most severe tests, knowing that after such trial it will be preferred to any other ware by users of high-grade chemical glassware. This glassware is *perfect in shape and uniform in thickness* and not as clumsy as that made of Jena Normal glass, and while it is without any doubt **THE BEST GLASSWARE MADE**, it is even somewhat lower in price than the Jena Normal Glass. *Each article bears our trade-mark, shown above.* Any other glassware purporting to be of the same grade or composition without being provided with our trade-mark, is an imitation, as it is only manufactured for us and can only be obtained from us.

So far we carry only the following articles in *Henry Heil Chemical Co.'s Bohemian Normal Glass* in stock: Beakers No. 2942 and 2952, Beaker Flasks No. 2962, Flasks No. 5246, 5251, 5258, 5259, 5263, 5266, 5272, 5282 and 5283, Funnels No. 5480/1 and Combustion Tubing No. 9786, *but we can also import to order any other goods*, such as Retorts, Receivers, Conical Flasks with ring, Evaporating Dishes and Crystallizing Dishes, etc., *made of the same superior glass*, if the quantities needed justify special manufacturing and importing, and we shall gladly submit quotations on application.

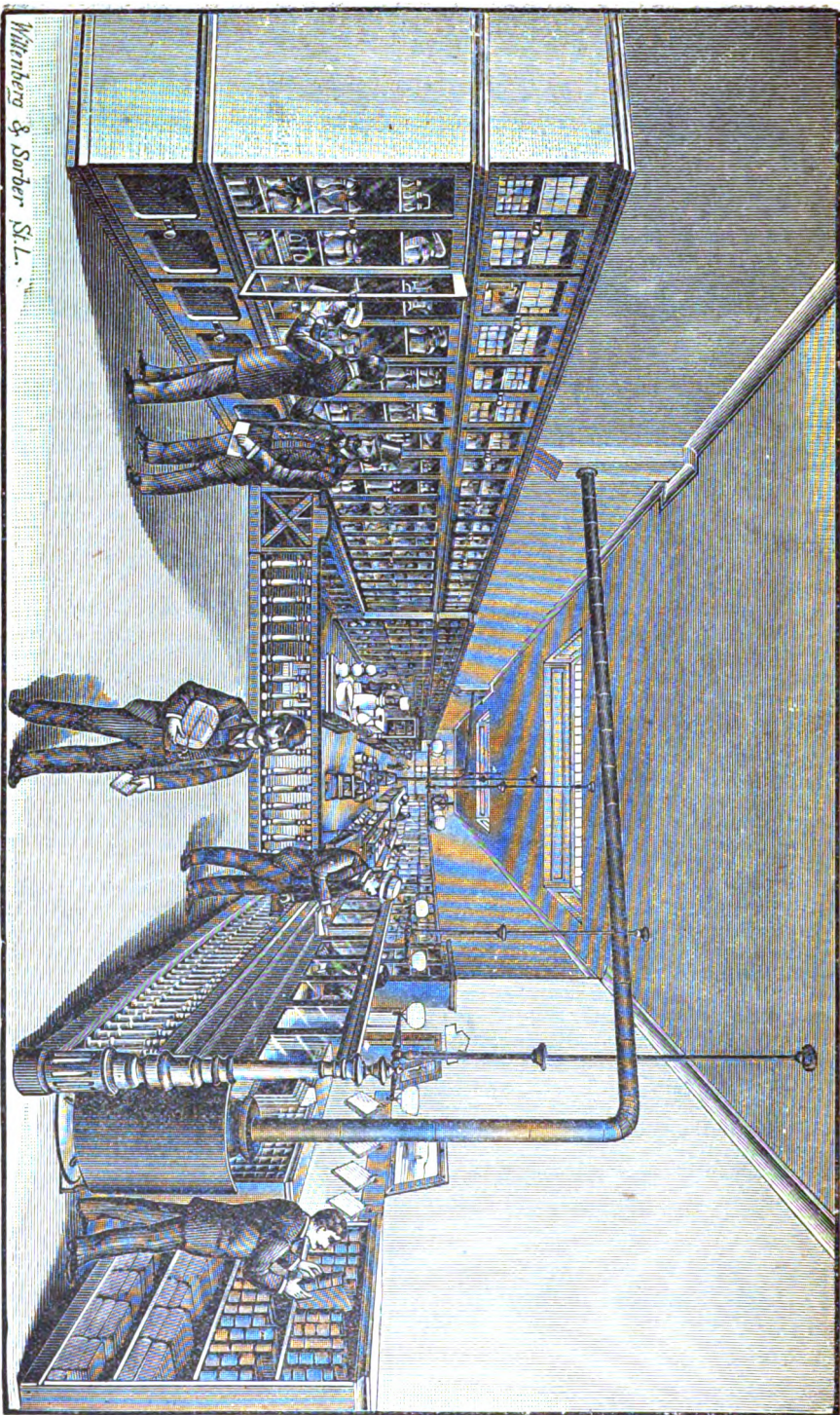
For prices of chemicals, reagents and minerals, we refer to our Chemical Price-list of August, 1903, covering 92 pages.

We take this occasion to extend to our numerous customers and friends our sincere thanks for their patronage and good will and to assure them that we shall spare no effort in the future, as in the past, to deserve their confidence and to give them entire satisfaction by paying strict attention to their wants and by supplying the best goods obtainable promptly and at lowest rates.

Very respectfully,

HENRY HEIL CHEMICAL CO.

St. Louis, September 1st, 1903.



*Wilkenberg & Sorber St. L.*  
NORTH HALF OF FIRST FLOOR OF THE FIVE-STORY BUILDING, OCCUPIED BY HENRY HEIL CHEMICAL CO., having a depth of 155 feet.

## ABBREVIATIONS.

pound .....	lb.	dozen .....	doz
ounce .....	oz.	cents .....	cts.
pint .....	pt.	inch .....	in.
quart .....	qt.	foot .....	ft.
gallon .....	gall.	book .....	bk.
gramme .....	grm.	bottle .....	bot.
decigramme .....	decigrm.	cork stoppered bottle .....	c. st. bot.
centigramme .....	ctgrm.	glass stoppered bottle .....	gl. st. bot.
milligramme .....	mgrm.	large .....	lge.
decagramme .....	deca.	medium .....	med.
hectogramme .....	hecto.	specific gravity .....	sp. gr.
kilogramme .....	ko or kilo.	chemically pure .....	chem. p.
meter .....	mtr.	concentrated .....	conc.
decimeter .....	dm.	assorted .....	assort
centimeter .....	cm.	commercial .....	com.
millimeter .....	mm.	powdered .....	powd.
cubic centimeter .....	c. c.	crystallized .....	cryst.
liter .....	lit.	purified .....	purif.
hectoliter .....	hectolit.	rectified .....	rectif.
cubic meter .....	cbmtr.	precipitated .....	precip.
drachm .....	drm.	granulated .....	granul.
grain .....	gr.	liquid .....	liq.
pair .....	pr.		

## COMPARATIVE TABLE OF WEIGHTS AND MEASURES.

milligramme.....	0,01543 grains.	1 avoirdupois pound.....	453,59265 grm.
centigramme .....	0,15432 "	1 liter.....	2,11340 pints.
decigramme .....	1,54323 "	1 " .....	2 pints, 1 fl. oz. 391 minims.
gramme .....	15,43235 "	1 cubic centimeter .....	0,03381 fluid ounce.
decagramme.....	154,32349 "	1 pint .....	0,47315 liter.
hectogramme.....	1543,23488 "	1 fluid ounce.....	29,57193 c.c.
kilogramme.....	15432,34874 "	1 " drachm .....	3,69649 "
" .....	2,20462125 avoirdupois lbs.	1 minim .....	0,06161 "
" .....	32,15073 troy oz.	1 meter.....	39,37079 inches.
" .....	35,27394 avoirdupois oz.	1 " .....	3,28090 feet.
1 grain .....	0,06479 gramme.	1 " .....	1,09363 yards.
1 pennyweight=24 gr.=	1,55517 gramme.	1 inch.....	2,53995 cm.
1 drachm.....	3,88794 "	1 foot .....	30,47945 cm.
1 troy ounce .....	31,10349 "	1 yard .....	91,438348 cm.
1 avoirdupois ounce.....	28,34954 "		

# AGENTS FOR

**Ferdinand Ernecke, Berlin, Manufacturer of High Grade Physical Apparatus.**

**The Spencer Lene Co.'s Microscopes and Accessories.**

**The Morgan Crucible Co., limited, Battersea Works, Manufacturers of Superior Crucibles, Muffles, Scorifiers, Furnaces, Etc.**

**J. H. Munktell's Swedish Filtering-Paper.**

**Paul Waechter's Unexcelled Microscopes.**



## SPECIALTIES.



## FLASKS AND BEAKERS OF BOHEMIAN NORMAL GLASS, SPECIALLY MANU- FACTURED FOR US, SUPERIOR TO ANY OTHER GLASSWARE.

**Schott & Genossen's Jena Normal Laboratory Glassware,  
Schleicher & Schuell's Standard Filtering-Paper,  
W. C. Heraeus' Reliable Hammered Platinum Ware,  
Genuine Porcelain Ware from the Royal Berlin and Royal  
Meissen Factories,**

**Berlin Porcelain Ware from the Sanitäts-Porzellan-Manufactur,  
Franz Schmidt & Haensch's Spectroscopes and Polariscopes,  
Kavalier's Unexcelled Bohemian Glassware.**

**Accurate Graduated Glassware,**

**Wm. Gundlach & Son's Hessian Crucibles,**

**Genuine Freiberg Scorifiers,**

**Improved Hood Stopper Reagent Bottles,**

**Plattner's Blow-Pipe Apparatus,**

**High-grade Metal Goods,**

**Standard Thermometers and Hydrometers,**

**Troemner's, Ainsworth's and Hell's Balances and Weights,**

**Wooden and Metal Supports of the Finest Quality,**

**Agate Mortars,**

**Imported and Domestic Chemicals for Analytical, Pharma-  
ceutical, Technical and Manufacturing Purposes,**

**Heavy Chemicals for Mining and Milling Uses,**

**Chemically Pure Acids, Etc., Etc.**

**FOR PRICES OF CHEMICALS SEE OUR SPECIAL CHEMICAL PRICE-LIST.**

# HENRY HEIL CHEMICAL COMPANY'S



## Illustrated Catalogue.

SUPERSEDING ALL  
PREVIOUS ISSUES.

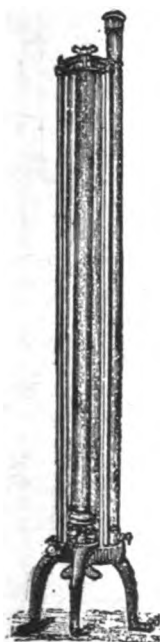


FOR PRICES OF CHEMICALS, SEE OUR SPECIAL CHEMICAL PRICE-LIST.

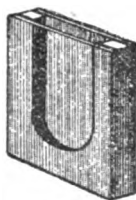
\*I 990—Absorptiometer, for estimating the co-efficient of absorption ..... \$120 00

\*I 994—Absorption Cells, for spectral analysis, etc., U shape.

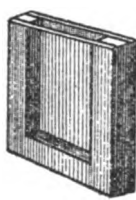
Height,	75 mm.	90 mm.	90 mm.
Width,	20 mm.	80 mm.	80 mm.
Depth,	4 mm.	7 to 9 mm.	15 mm.
Each	\$3 10	4 40	9 90



990



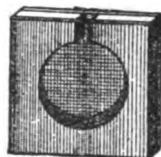
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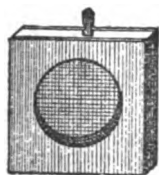
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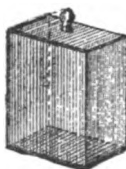
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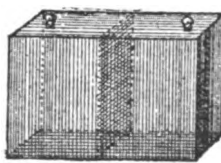
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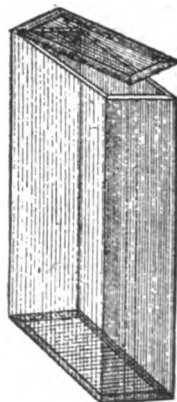
994/4



994/5



994/6



994/7

\*I 994/1—Ditto, ditto, square.

Height	Width	Depth	
90 mm.	80 mm.	7 to 9 mm.; each.....	\$ 5 50
90 mm.	80 mm.	15 mm.; each.....	12 40

\*I 994/2—Ditto, ditto, round, with glass stopper.

Outside diameter	Inside diameter	Depth	
50 mm.	40 mm.	12 to 15 mm.; each.....	\$9 90
100 mm.	80 mm.	7 to 9 mm.; each.....	9 90

\*I 994/3—Ditto, ditto, round.

Diameter,	20 mm.	60 mm.	40 mm.	80 mm.
Depth,	1 to 4 mm.	1 to 4 mm.	5 to 9 mm.	5 to 9 mm.
Each.....	\$1 80	4 40	3 85	6 15

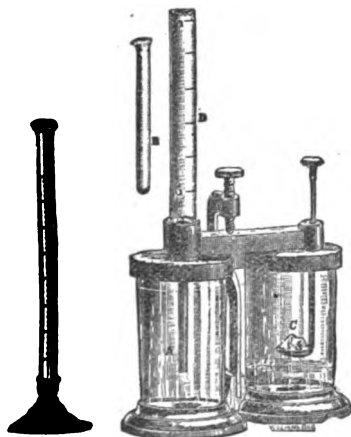
\*I 994/4—Ditto, ditto, round, with glass stopper.

Diameter, 20 mm.	Depth, 10 to 11 mm.	12 to 15 mm.
Each.....	\$6 15	7 40

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

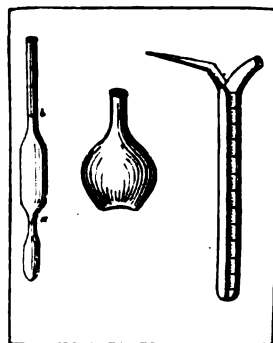
- \*I 994/5—**Absorption Cells**, for spectral analysis, etc., square, with cemented cover and glass stopper, 40 x 40 x 10 m (Illustr. page 11). Each..... \$ 6 10
- \*I 994/6—Ditto, ditto, square, double, for observation of two liquids simultaneously. Inside measure of each cell 40 x 25 x 10 mm (Illustr. page 11). Each..... 10 15
- \*I 994/7—Ditto, ditto, square, with cover. (Illustr. page 11).
- | Outside height | Outside width | Inside depth      |      |
|----------------|---------------|-------------------|------|
| 40 mm.         | 30 mm.        | 5 mm.; each.....  | 1 20 |
| 80 mm.         | 60 mm.        | 10 mm.; each..... | 2 20 |
| 100 mm.        | 100 mm.       | 30 mm.; each..... | 5 25 |
| 150 mm.        | 100 mm.       | 5 mm.; each.....  | 4 95 |
- \*1000—**Acetometer**, Otto's. A graduated tube on wooden support, for determining the percentage of Acetic Acid in Vinegar..... 1 00
- \*1010—**Acidimeter**, Gall's, for determining the quantity of Acid in Wine; consisting of a graduated burette, pipette and flask in polished case.. 3 25

REMEMBER OUR DISCOUNT.

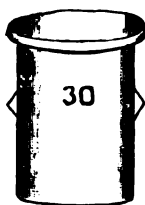


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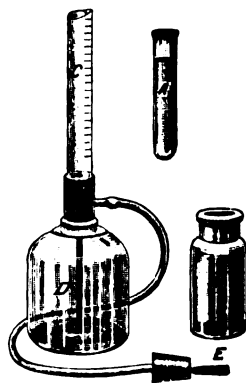
1020



1010



1040



1034

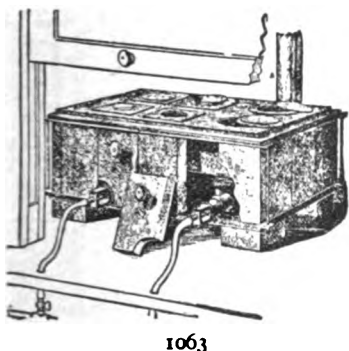
- \*1020—Ditto, Twitchell's, for vinegar..... 18 00
- 1030—Ditto, ditto, for wine..... 18 00
- 1031—**Acidimeter Cups**, for Twitchell's Acidimeter, each..... 45
- 1032—**Acidimeter Tubes, graduated, B, small**, for Twitchell's Acidimeter, each..... 25
- 1033—**Acidimeter Rubber Washers**, for Twitchell's Acidimeter, each, 10 cts. per doz..... 1 00
- \*1034—**Acidimeter, Leo's, for Vinegar**, very simple and accurate..... 5 00
- Acid Pitchers** of stoneware. See No. 7641.
- \*1040—**Acid Pots**, of stoneware.
- |                       | lit.   | lit. | lit. | lit. | lit. | lit. | lit. | lit. | lit. | lit. |
|-----------------------|--------|------|------|------|------|------|------|------|------|------|
| Approximate capacity, | 1      | 2    | 3.8  | 7.6  | 11.4 | 15   | 18.9 | 22.7 | 30.3 | 45.5 |
| Each.....             | \$0 25 | 35   | 60   | 1 20 | 1 80 | 2 40 | 3 00 | 3 60 | 4 80 | 7 20 |
- 1041—**Acid Pots**, of stoneware, with faucet hole.
- |                       | lit.   | lit. | lit. | lit. | lit. | lit. | lit. | lit. | lit. | lit. |
|-----------------------|--------|------|------|------|------|------|------|------|------|------|
| Approximate capacity, | 1      | 2    | 3.8  | 7.6  | 11.4 | 15   | 18.9 | 22.7 | 30.3 | 45.5 |
| Each.....             | \$0 30 | 40   | 65   | 1 30 | 1 85 | 2 80 | 3 25 | 3 90 | 5 20 | 7 80 |



**Acid-Proof Stoneware**, such as Bottles, Jars, Evaporating Dishes, Kettles, Funnels, Stop-cocks, Mortars, Retorts, Tubes, Troughs, Condensing Towers, Cylinders, Chlorine Generators, Acid Pumps, Pitchers, Pots, etc.,

**Imported to order at lowest rates.**

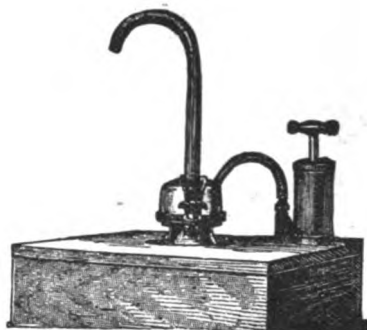
- \*1050—**Acid Pump**..... 20 00  
 1051—**Acid Pump, the best and safest Pump made, Henry Heil Chemical Co.'s**, consisting of a plain glass Syphon with piece of black rubber tubing and extra large nickel-plated spring clamp, a bent glass tube to which is attached a piece of gmm. rubber tubing  $1\frac{1}{2}$  mtr. long, connected with a foot blower No. 9; a short, straight glass-tube with india rubber tube and large nickel-plated spring clamp, by means of which the flow of acid can be arrested instantly, and three French Rubber Stoppers, Nos. 10, 11, 12, so that the pump can be used for any carboy. Complete, \$11.00. Packed ready for shipment..... 12 50



1063



1180



1050



1060

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.;  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- 1052—**Acid Pump, the best and safest Pump made; same as No. 1051**, but instead of plain syphon, a bent glass tube and 105 cm. black rubber tubing with extra large nickel-plated spring clamp are furnished. Complete, \$12.00. Packed ready for shipment..... \$13 50

\*1060—**Adapters, straight or bent**, of Bohemian glass, for connecting retorts with condensers or receivers.

Approximate Diameter of large end,      3      4      5      7      8 cm.  
    \$0 25   0 30   0 35   0 50   0 75

- \*1063—**Air Bath, Blair's**, consisting of a cast-iron sink, supported by fire bricks. The top is of asbestos board with sheet iron underneath, to give it more strength ..... 45 00

1065—**Air Gun Barrel**. See Catalogue of Physical Apparatus.

1068, etc.—**Air Pump with Receiver for compressed air**. See Catalogue of Physical Apparatus.

1070/1, etc.—**Air Pumps**. See Catalogue of Physical Apparatus.

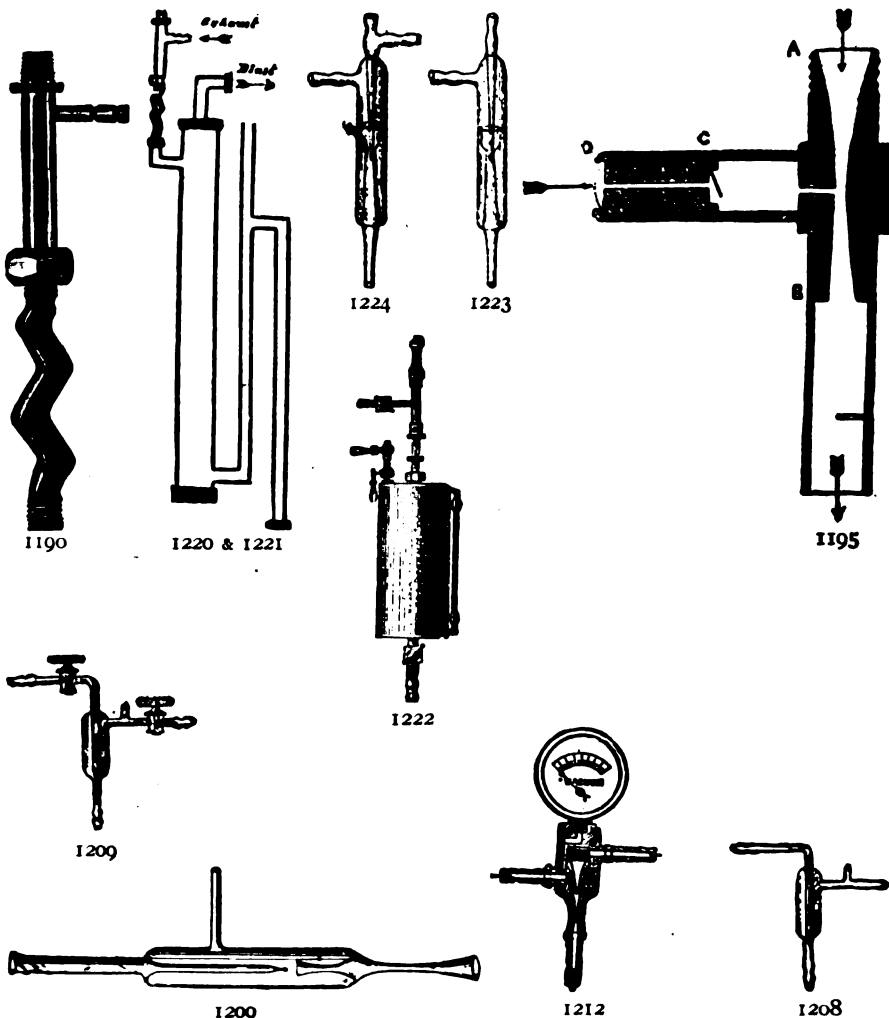
1149—**Air Pump Plates**. See Catalogue of Physical Apparatus.

1150, etc.—**Air Pumps, Mercurial**. See Catalogue of Physical Apparatus.

- \*1180—**Air Pump, (Filtering Pump)**, of glass, for water pressure, according to Professor Richards, usually called Richards' Aspirator ..... \$ 1 75

*1190—Air Pump, (Filtering Pump), Richards', of brass, simple and powerful; medium, \$1.60; large, \$2.20; and extra large .....	\$12 50
1191—Ditto, ditto, ditto, with gauge; medium, \$9.35; large .....	9 85
*1195—Ditto, ditto, of brass, Chapman's. Small, \$1.85; large, \$3.00; extra large .....	6 25
1195/1—Coupling with Collar for No. 1195 Filtering Pumps; Complete, small, 90 cts.; large, 95 cts.; extra large .....	1 25
*1200—Ditto, ditto, of Glass, Finkner's .....	1 55
*1208—Air Pump, (Filtering Pump) of glass, Fischer's .....	1 35
*1209—Ditto, ditto, with 2 stop-cocks .....	3 75
1210—Ditto, ditto, of brass, Fischer's, for water pressure .....	3 30
1211—Ditto, ditto, of brass, nickel-plated .....	5 00
*1212—Ditto, ditto, with vacuum gauge .....	10 60

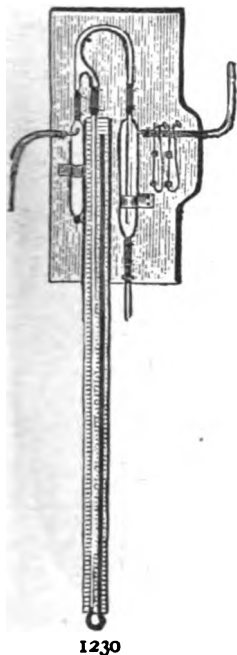
REMEMBER OUR DISCOUNT.



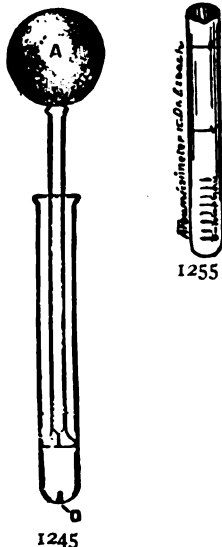
*1220—Ditto, ditto, with attachment for utilizing the air drawn through the filtering pump, giving a blast sufficient for a Bunsen's blast lamp .....	10 50
The blast attachment above, without filter pump .....	8 65
*1221—Ditto, ditto, ditto, of heavier and finer construction, complete .....	14 00
*1222—Ditto, ditto, according to Muencke .....	17 50
1222/1—Ditto, ditto, with vacuum gauge .....	27 00
*I 1223—Ditto, ditto, according to Muencke, made of glass .....	1 55
*I 1224—Ditto, ditto, according to Muencke, made of glass, with extra tube for connection with gauge .....	2 00



- \*1230—**Air Pump**, (Filtering Pump), Bunsen's, for quick filtration or evaporation in vacuo, of entirely improved construction. The plate is made of one solid piece. With improved screw clamp and scale of japanned metal. Mounted on wooden frame ..... \$ 9 00
- 1231—The glass part alone ..... 3 50
- \*1240—**Air Pump**, (Filtering Pump), Bunsen's, improved by Zulkowsky, with shortened barometer gauge, arranged for direct connection with lead pipes, mounted on wooden frame ..... 9 75
- \*1241—Ditto, ditto, Arzberger & Zulkowsky's, with 2 Geissler's stop-cocks, mounted on frame ..... 7 50

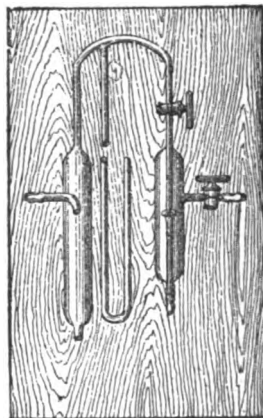


1230

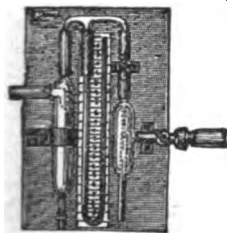


1245

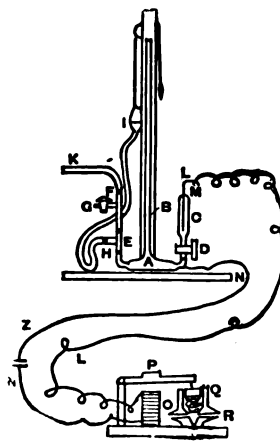
1255



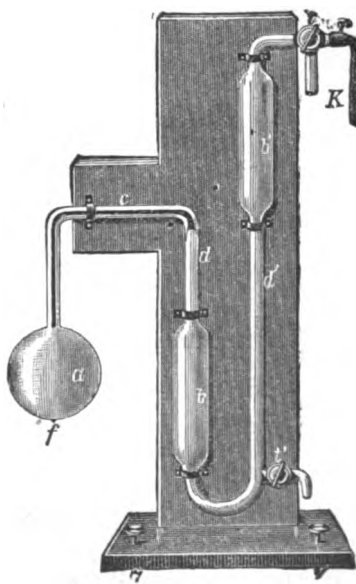
1241



1240



1252



1251

## APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- 1241/1—Ditto, ditto, ditto, with 1 Geissler's stop-cock ..... 7 00
- \*1245—**Air Tester**, Wolpert's, for testing the quality of air in an inhabited apartment. For instructions and table, see Gage's Manual ..... 3 75
- 1250—**Air Thermometer Tube**. See Catalogue of Physical Apparatus.
- \*1251—**Air Thermometer**, Bottomley's, modification of Jolly's ..... 12 50
- \*1252—**Air Thermometer and Automatic Heat Regulator**, according to R. Fessenden. (*Chem. News*, 61, 4) Without battery ..... 15 00
- \*1255—**Albumenometer**, Esbach's, FOR QUANTITATIVE ESTIMATION OF ALBUMEN IN URINE (Directions page 16) ..... 90

## DIRECTIONS:

Fill the instrument to U with the urine and to R with the test solution; then mix by agitation. Close the tube with a rubber stopper and lay the whole aside for 24 hours to obtain a perfect and well-settled precipitate.

Each of the main lines of division to which the accumulated precipitate reaches represents one gramme of albumen in one liter of urine or one pro mille.

The test solution consists of

10 grammes Picric Acid, to coagulate the Albumen.

20 grammes Citric Acid, to keep the Phosphates in solution.

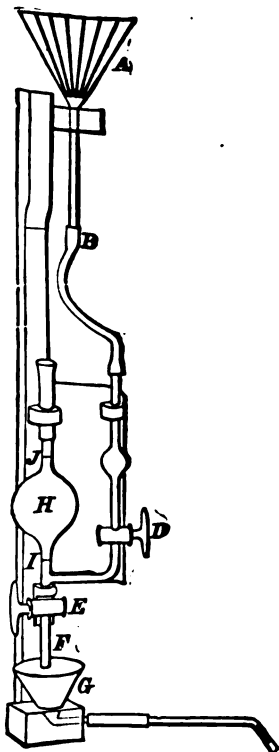
Water, a sufficient quantity to make one liter.

Two grammes Picric Acid represent one gramme of Albumen.

Test solution, as described, 60 cts. per  $\frac{1}{2}$  lit., with glass-stoppered bottle.

\$1 05 per lit., with glass-stoppered bottle.

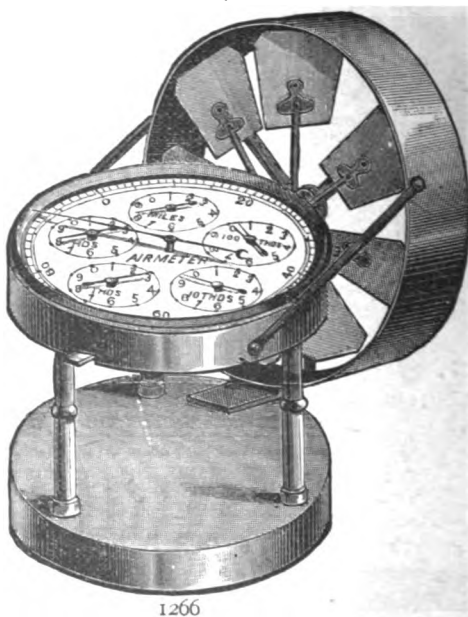
REMEMBER OUR DISCOUNT.



1265



1260



1266

\*1260—Alembics, of Bohemian glass, head ground air-tight to the flask, flat bottom.

Approximate capacity,	125	180	250	500	1000 cc.
	\$0 60	0 85	1 00	1 35	1 85

\*1265—Alliquotimeter, Winton's, for the analysis of fertilizers. (*Hart's Journal of Anal. Chem.*, 1890, April) .....

\$ 7 50

—Ampere's Frame. See Catalogue of Physical Apparatus, No. 2422/1.

\*1266—Anemometer (Wind Gauge), portable, extensively used for testing the ventilation of Hospitals, Schools and Public Buildings, and for measuring the velocity of air currents in sewers, mines, etc.: forms also an admirable Pocket Anemometer for tourists. Diameter of fan wheel, 7 cm., with disconnecter. The indications are obtained by the revolution of a series of fans (similar to those of Biram's Anemometer), acting first upon a long hand capable of recording the velocity of fifty feet per minute on the large dial, divided to 100 feet, and then successively by a train of wheels on the indexes of five smaller dials, recording respectively 100, 1,000, 100,000 and 10,000,000 feet, or 1,893 miles. In wooden case .....

37 50

1266/1—Ditto, ditto, with Timer, in wooden case .....

40 00

\*1266/2—**Anemometers, Biram's**, for registering currents of air in mines, etc.; in wooden case.

Reading to	1,000	1,000	100,000	1,000,000	10,000,000 ft.
Diameter, 10 cm.	15 cm.	15 cm.	15 cm.	15 cm.	15 cm.
Without disconnecter, \$28 00	32 00	37 50	37 50	65 00	
With disconnecter.....	30 00	35 00	41 25	41 25	

1266/3—Ditto, ditto, in leather Pocket Case, diameter 7.5 cm., reading to 1,000 ft. (See illustration No. 1266/2.) Without With disconnecter

\$32 50 35 00

\*1268—**Anthracene Bath**, of heavy brazed copper, with silver-plated inner vessel, 1 liter capacity.....

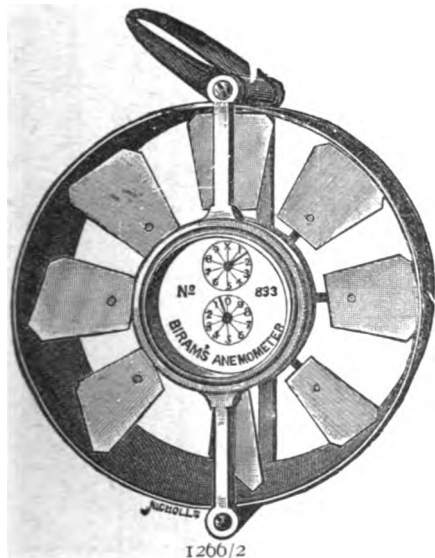
\$13 00

\*1270—**Anvil**, of finely polished hard steel, for blow-pipe analysis.....

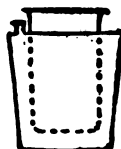
62½

\*1280—**Anvil and Mortar** combined, of finely polished steel, for blow-pipe analysis, Leed's form.....

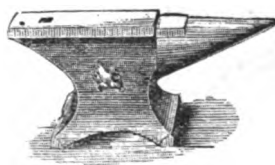
2 25



1266/2



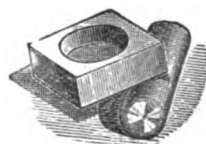
1268



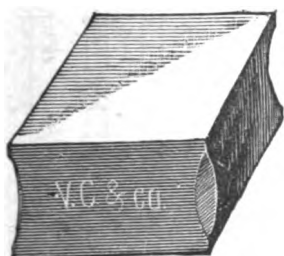
1290



1270



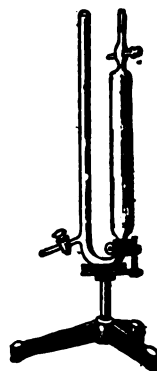
1280



1305



1301



1315/1

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*1290—**Anvils, of solid steel.**

Approximate weight, 0.45 2.25 4.5 6.75 13.5 22.75 27 36 45 kilo.  
\$1 65 3 20 3 75 4 65 6 40 8 75 9 90 12 60 15 75

\*1301—**Anvils, square**, of finest steel, with mirror polished face; with point to set in block. Approximate weight, 450, 675, 900, 1125, 1350, 1800, 2250 grms.; per kilo.....

1 67

\*1305—Ditto, flat, square, of solid steel, with mirror polished face.

Each ..... 2.5 3.75 5 7.5 10 cm. square.  
\$0 90 1 35 1 80 2 70 3 60

1310—**Anvil**, of chilled iron, 4½ kilo.; similar to fig. 1290.....  
1311—**Apparatus for the Estimation of Fatty Acids**; the glass parts alone. (Pharmaceut. Centralblatt, 1880, p. 173).....

2 25

4 50

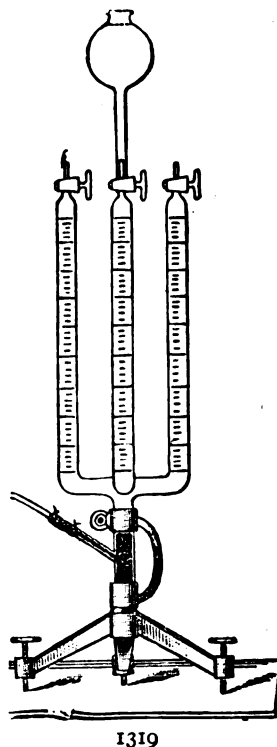
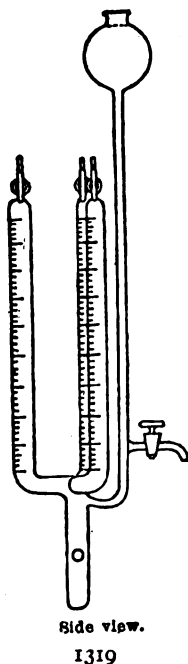
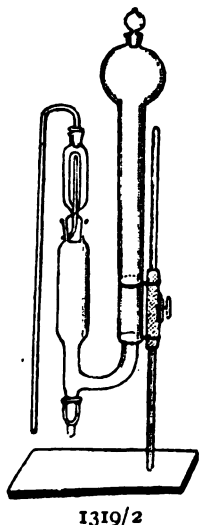
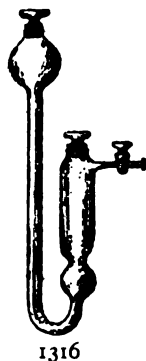
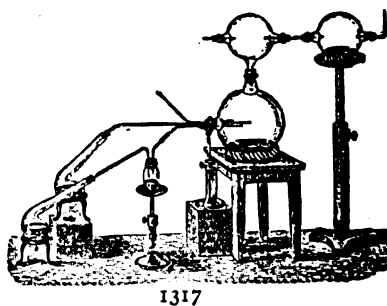
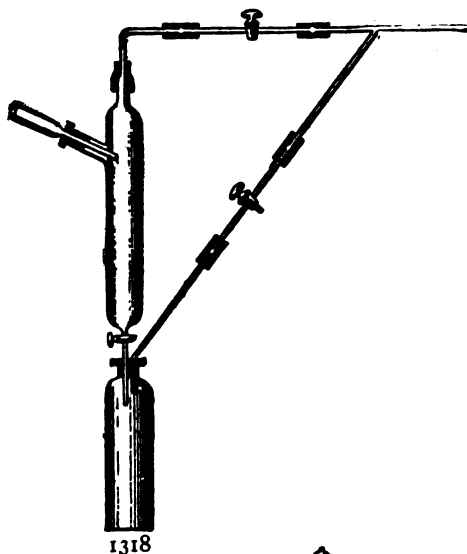
6 85

I 1315—**Apparatus**, to illustrate the manufacture of SO<sub>2</sub>, the glass parts only  
\*I 1315/1—Ditto, ditto, with support.....

10 60

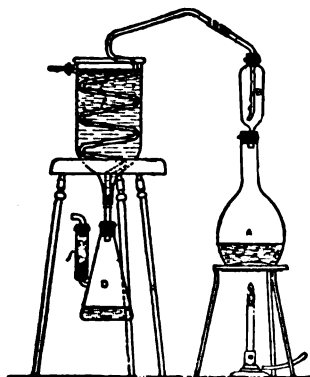
- \*I 1316—**Apparatus**, for experimental preparation of HCl., according to Dr. Konink ..... \$ 7 50
- |                               |        |      |          |
|-------------------------------|--------|------|----------|
| Approximate capacity of bulb, | 500    | 1000 | 1500 cc. |
| Each.....                     | \$6 25 | 8 65 | 10 00    |
- \*I 1317—**Apparatus**, according to Gorup-Besanez, for experimental preparation of sulphuric acid..... 25 00
- \*I 1318—Ditto, according to Thorne, for distillation in vacuo..... 6 25
- \*\*I 1319—Ditto, according to Lipsius-Valenz, for estimating the atomic weight of the metals of rare earths, used in combination with Norblad's generator. Without Norblad's generator; on support..... 35 00

REMEMBER OUR DISCOUNT.

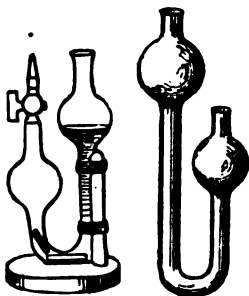


- I 1319/1—Ditto, according to Norblad, for the generation of hydrochloric acid from ammonia and concentrated sulphuric acid. Used also for generating  $\text{CO}_2$ ,  $\text{H}_2$ ,  $\text{H}_2\text{S}$ ,  $\text{Cl}_2$ , etc.
- |                      |        |        |
|----------------------|--------|--------|
| Approximate Capacity | 1 lit. | 2 lit. |
| Each                 | 10 00  | 15 00  |
- \*I 1319/2—Ditto, ditto, with support
- |  |       |       |
|--|-------|-------|
|  | 15 00 | 20 00 |
|--|-------|-------|

*1320—Apparatus, Leed's ammonium nitrite .....	\$ 48 00
*1325—Ditto, for the estimation of Ammonia, by distillation, according to Stein and Schwartz. ( <i>Fischer's Zeitschrift</i> , 1889, p. 318). Without support, burner and tripod .....	8 00
*1330—Ditto, for the detection of arsenic, according to Marsh, latest form, complete with glass stop-cock, on polished wooden support.....	3 30
*1331—The glass part alone without stop-cock .....	50
*1340—Apparatus for the detection of arsenic, Otto's .....	1 25
*1341—Ditto, ditto, with Rose's lamp and support table .....	10 00
*1350—Ditto, ditto, according to Fresenius & Otto .....	75



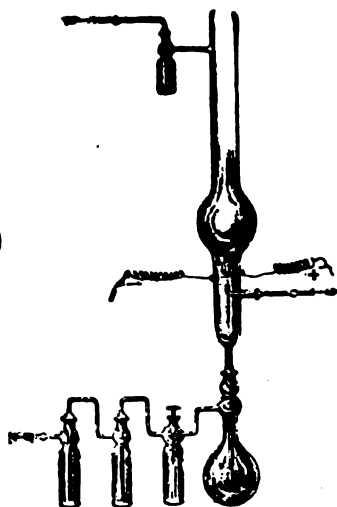
1325



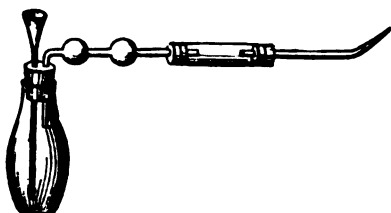
1330



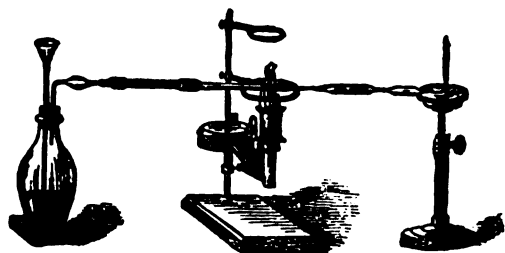
1331



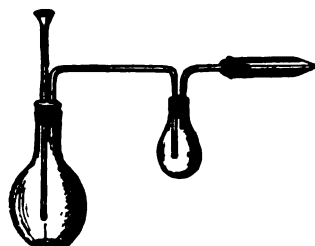
1320



1340



1341



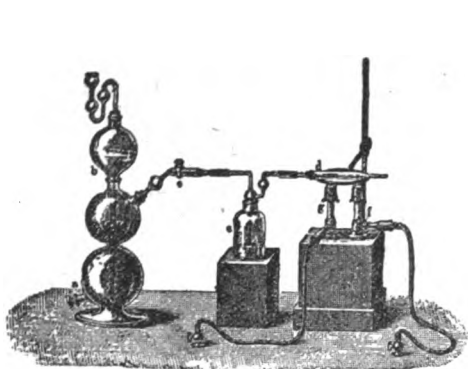
1350

*1351—Apparatus, for the detection of arsenic, Fresenius & Babo's Without supports, Ring-stand and Burners. ( <i>Illustr.</i> p. 20).....	8 75
With 2 Ring-stand and 2 Burners, No. 3770 .....	12 60
*1352—Ditto, for the determination of boiling points, according to Berthelot, with thermometer. ( <i>Illustr.</i> p. 20) .....	9 50
*I 1352/1—Ditto, for the determination of boiling points under diminished pressure, according to Kraft and Noerdlinger. ( <i>Fischer's Zeitschr.</i> , 1889, p. 316). ( <i>Illustr.</i> p. 20) .....	10 60
*1353—Apparatus for the Determination of Sulphur by Bromine, according to Ledebur. Tube filled with glass-beads. ( <i>Illustr.</i> p. 20)..	
Without Supports.....	9 35
With 2 Iron Supports .....	11 85
The tube with 2 stop-cocks, filled with glass-beads, alone.....	5 60

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*1355—Apparatus, Dr. L. Bergeon's, for the treatment of consumption by gaseous enamata, improved form, with safety tube, rubber stoppers and 2-gallon rubber gas-bag.

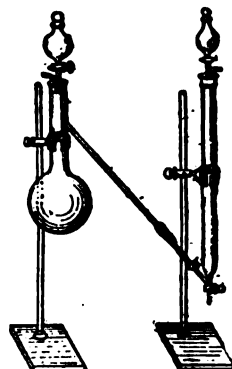
As illustrated .....	\$13 75
Packed, ready for shipment.....	14 15
1355/1—Ditto, ditto, Eastern style, with single neck bottles.....	11 90
Packed ready for shipment .....	12 30



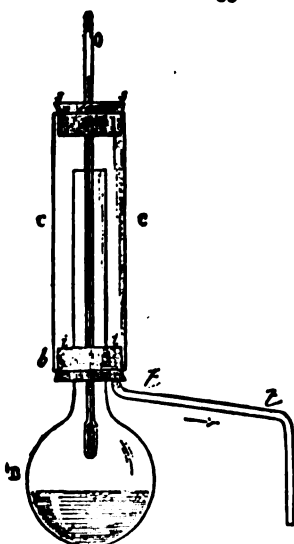
1351



1360



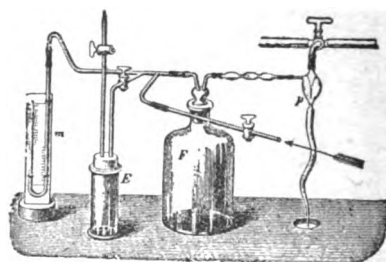
1353



1352



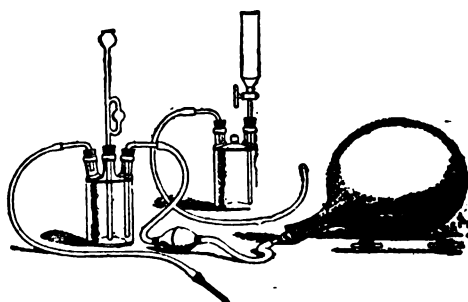
1356



1352/1



1361



1355

\*1356—Ditto, for heating liquids of a high boiling point; a tube with four bulbs ground into the neck of a flask with round bottom.

Approximate capacity.....	60	125	250	500 cc
	\$0 75	90	1 10	1 35

\*1360—Apparatus, for the determination of carbon in steel, according to Fresenius, with platinum holders for the positive pole.....

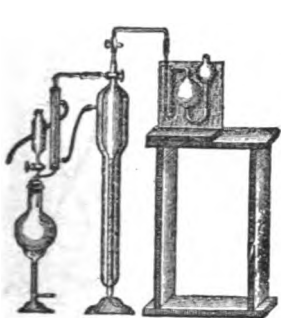
5 00

\*1361—Apparatus for the determination of Carbon, according to Liebig. Combustion furnace with combustion tube of infusible Bohemian glass, chloride of calcium tube and potash bulb.

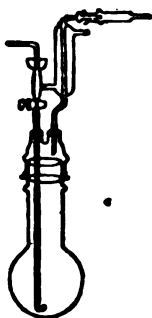
Furnace .....	45	60 cm.
Apparatus as described .....	4 35	5 15

REMEMBER OUR DISCOUNT.

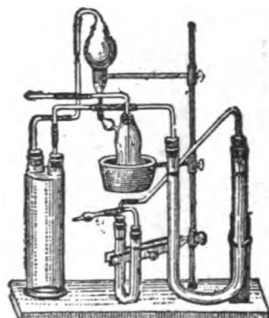
- \*1365—**Apparatus for the determination of Carbon**, according to Ullgren, modified by Finkener, for the estimation of carbon in iron ..... \$ 9 35
- \*I 1366—**Apparatus**, for volumetric estimation of carbon in iron, according to Thoerner, complete, with support, but without burner, (*Fischer's Zeitschrift*, 1889, p. 645) ..... 32 00
- I 1366/1—Ditto, ditto, glass parts only ..... 18 75



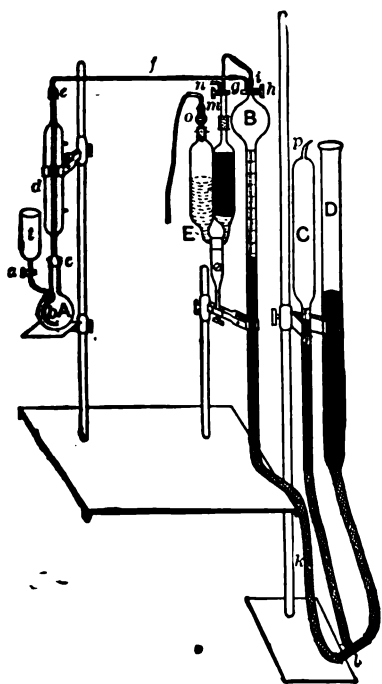
1366



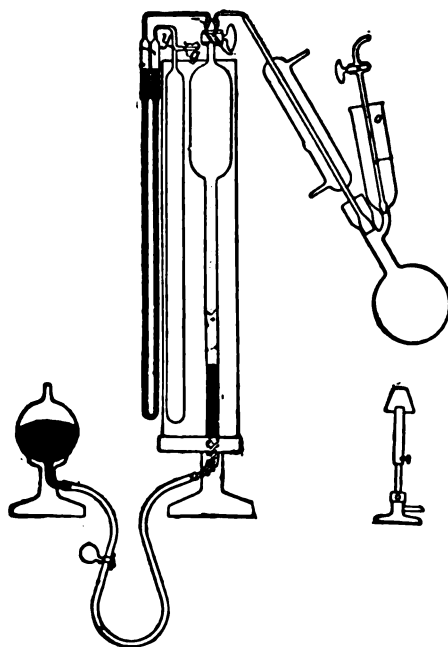
1365



1372/1



1367



1367/1

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

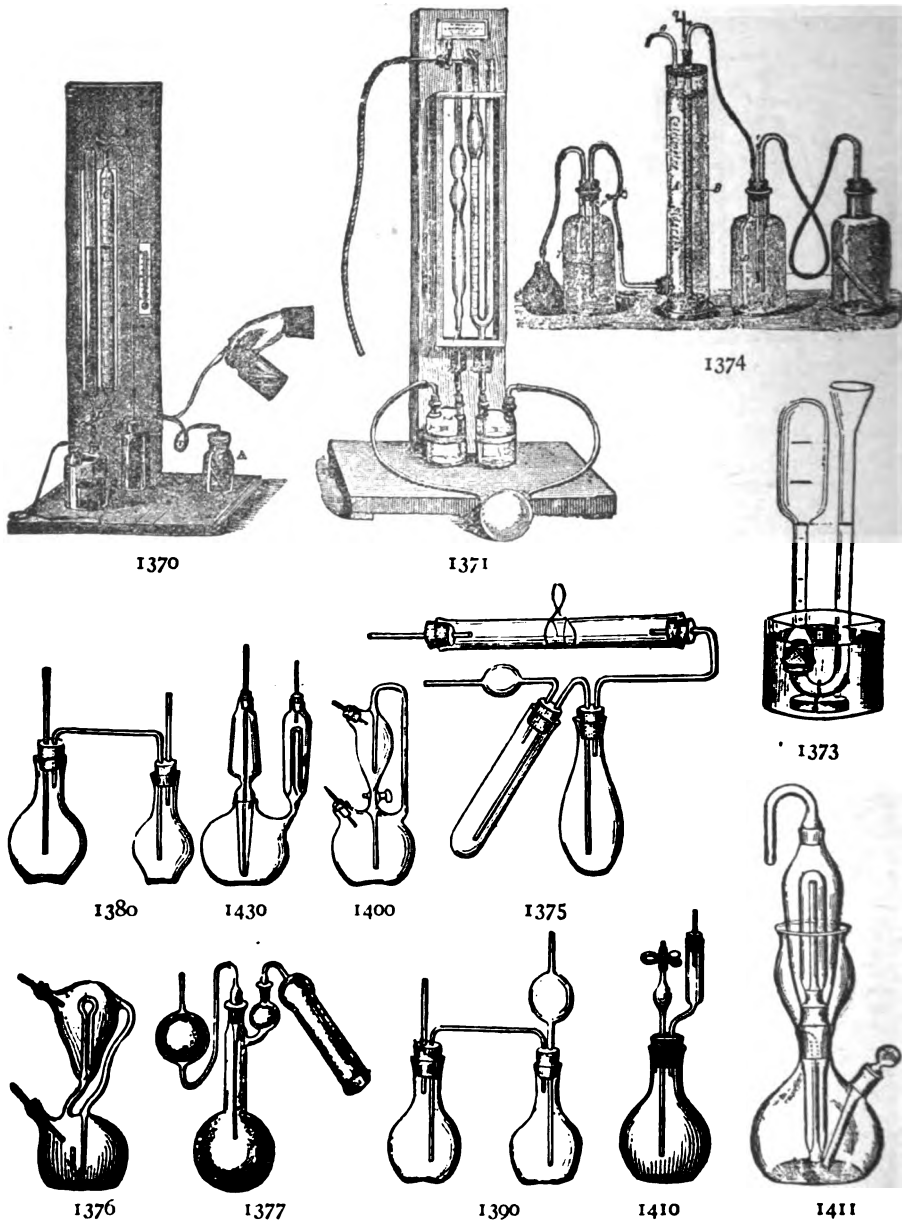
- \*1367—**Apparatus, Lunge's**, for the determination of carbon in iron.  
With support ..... \$33 30  
and without supports ..... \$26 65
- \*1367/1—Ditto, ditto, latest modification, complete as illustrated ..... 26 65
- \*1370—**Apparatus** for estimating calcium carbonate in bone black, Scheibler's. (*Illustr.* p. 22) ..... 25 00
- \*I 1371—**Apparatus**, Scheibler's, for quantitative estimation of carbonic acid in saturation gases. (*Illustr.* p. 22) ..... 43 25
- I 1372—**Apparatus** for the estimation of Carbon in Pig Iron, according to Ullgren, glass parts with connections ..... 10 00
- \*I 1372/1—Ditto, ditto, complete, with support, clamps, etc ..... 18 75

- \*1373—Apparatus, for volumetric determination of Carbonic Acid, for sugar refineries, according to Gawalovsky; with two measuring tubes and one filling tube on cork; complete, with dish.....
- \*1374—Apparatus, for estimation of Carbonic Acid, according to Siderski. (See *Fresenius' Zeitschrift fuer analytische Chemie*, Vol. 26, p. 336) .....

\$ 6 75

15 00

REMEMBER OUR DISCOUNT.



- \*1375—Ditto, for the determination of carbonic acid, Rose's .....
- \*1376—Ditto, Rose's new form .....
- \*1377—Ditto, Bunsen's .....
- \*1380—Ditto, according to Fresenius & Will .....
- \*1390—Ditto, Fresenius' improved form .....
- \*1400—Ditto, Kipp's with stop-cock .....
- \*1410—Ditto, Mohr's .....
- \*1411—Ditto, Mohr's new style .....

1 00

1 75

1 25

55

60

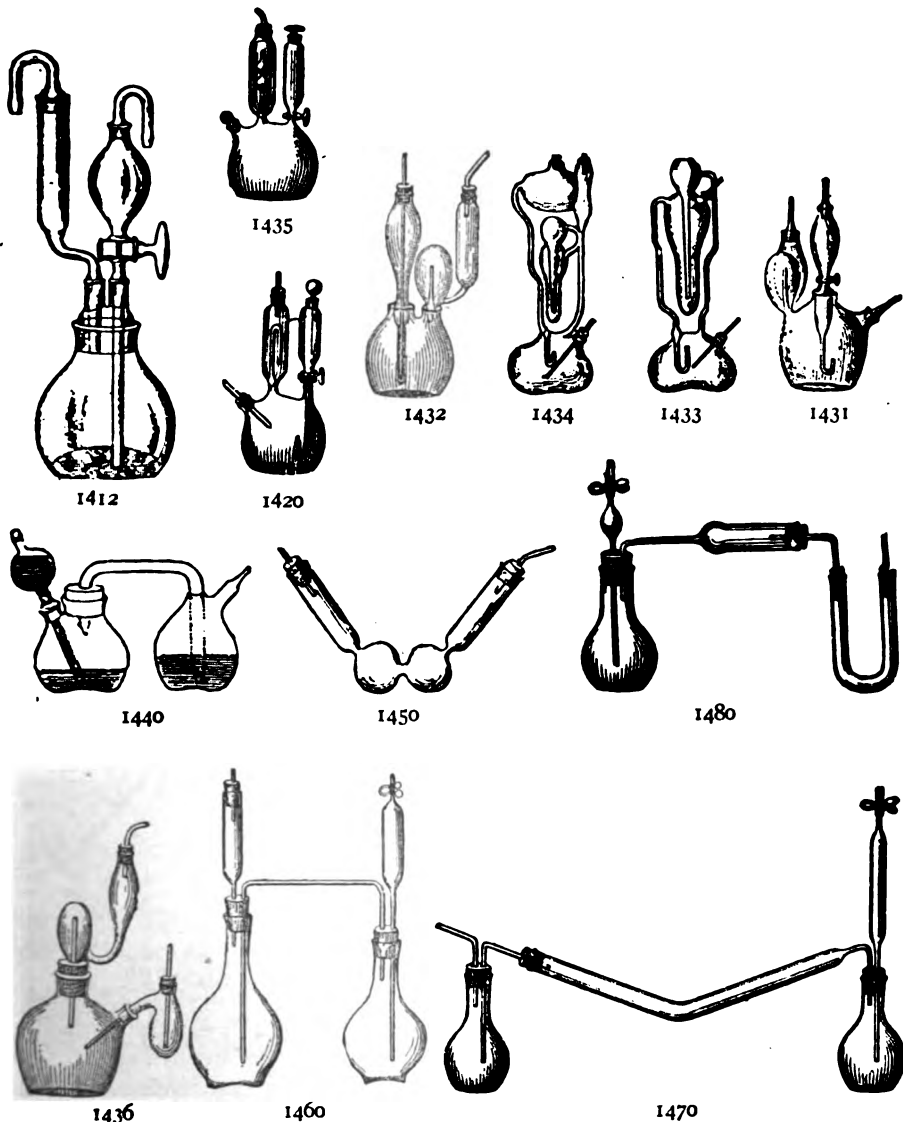
2 10

85

3 75



*1412—Apparatus, for the determination of Carbonic Acid, Mohr's new style .....	\$3 75
*1420—Ditto, Rohrbeck's .....	2 25
*1430—Ditto, Geissler's. (Illustr. p. 22) .....	1 85
*1431—Ditto, Geissler's new form, with stop-cock .....	2 50
*1432—Ditto, according to Geissler & Erdmann .....	1 75
*1433—Apparatus, for the determination of Carbonic Acid, Geissler's latest form .....	2 00
*1434—Ditto, Geissler's latest form for two acids .....	2 25
*1435—Ditto, Schroetter's .....	2 25



## APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*1436—Ditto, Sonnenschein's .....	1 75
*1440—Ditto, Wetherill's .....	1 50
*1450—Ditto, Fritsche's .....	60
*1460—Ditto, for the determination of Carbonic Acid by absorption, Mohr's .....	1 10
*1470—Ditto, ditto, ditto .....	1 20
*1480—Ditto, ditto, according to Brunner & Mohr .....	1 05

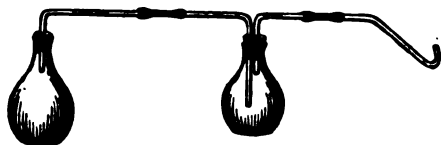
*1490—Apparatus for the determination of Carbonic Acid in the atmosphere	\$ 3 50
*1500—Ditto, ditto, of more simple construction	1 20
*1510—Ditto, for the determination of Carbonic Acid by volume	1 25
*1511—Apparatus, Winkler's for estimating Carbonic Acid; in case	18 75
I 1511/1—Ditto, ditto, the glass parts alone	11 25
1512—Ditto, for estimating Carbonic Acid according to Classen; the glass parts alone	3 50



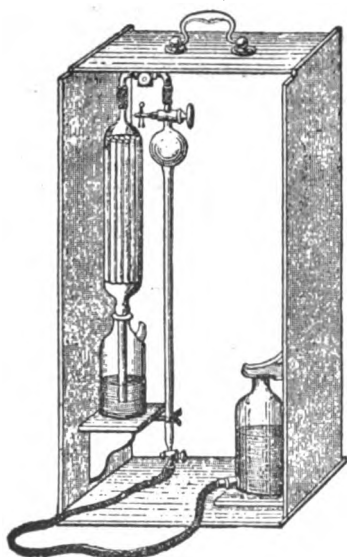
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1514



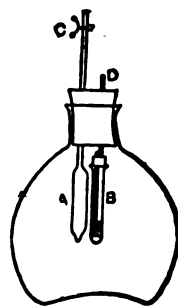
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1511



1513/1



1515



1512/1



1500

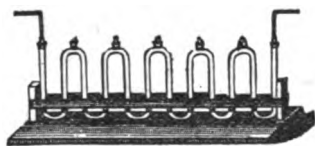
REMEMBER OUR DISCOUNT.

*1512/1—Ditto, ditto, with support	5 00
I 1513—Ditto, for the determination of Carbonic Acid according to Baur; without support	12 50
*I 1513/1—Ditto, ditto, with support	16 00
*1514—Ditto, for the determination of Carbonic Acid according to Finkener	7 50
*I 1515—Ditto, according to Flint, for estimating CO <sub>2</sub> in carbonates by loss of weight	2 75
*1516—Ditto, according to Thoenner, for volumetric determination of Carbonic Acid in soda, mineral carbonates, etc. ( <i>Fischer's Zeitschrift</i> , 1889, p. 643.) (Illustr. p. 25)	3 35
*I 1517—Ditto, for estimating Carbonic Acid, bound or free, in Beer, Wine and in other liquids, Thoenner's ( <i>Fischer's Zeitschrift</i> , 1889, p. 644.) (Illustr. p. 25)	15 00
*1518—Apparatus, for determining the quantity of Carbonic Acid in Baking Powder, according to Crampton; glass parts only ( <i>Journal of Anal. Chem.</i> , 1890, April). (Illustr. p. 25)	11 25

*1520—Apparatus, for the absorption of Chlorine. Bunsen's.....	\$ 1 00
*1530—Ditto, ditto, Fresenius'.....	1 00
*1 1531—Apparatus, for volumetric determination of Chlorine, according to Bunsen; complete with support and burner.....	5 60
I 1531/1—Ditto, ditto, the glass parts alone.....	3 10
1536—Apparatus, for absorption, according to Gore; without frame.....	6 00
*1536/1—Ditto, ditto, with frame and paste-board.....	10 00



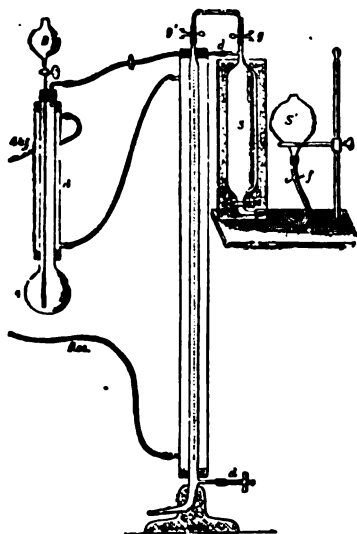
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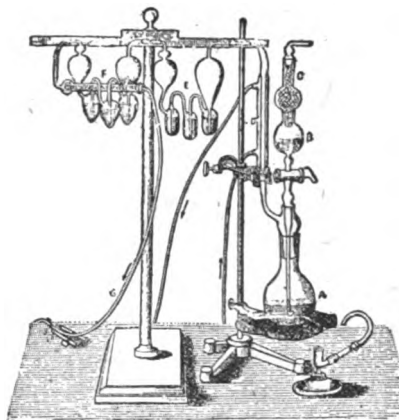
1536/1



1520



1517

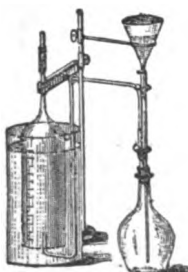


1518

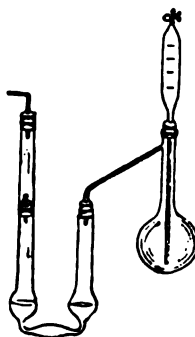
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



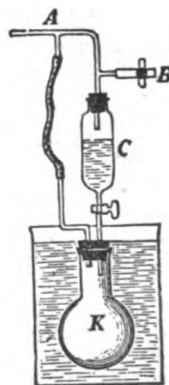
1531



1539



1537



1516

*1537—Apparatus, Mohr's, for the absorption of Ammonia, etc.....	2 50
*I 1538—Ditto, for collecting and absorbing Gases, Bunsen's; complete, with stand. (Illustr. p. 26).....	8 00
*1539—Ditto, for measuring absorption, Richter's; consisting of cylindrical jar, graduated bell glass, gas-bottle, funnel-tube, etc.....	9 35
1539/1—Ditto, ditto, not graduated.....	7 90

1540—**Apparatus**, for generating Chlorine Gas, consisting of flask, washing bottle, safety tube and delivery tube (fig. 1841)

	125	250	360	500	1000	2000cc
With cork stoppers.....	\$ 75	85	95	1 00	1 30	1 60
With soft rubber stoppers	85	95	1 05	1 10	1 50	1 85
With soft rubber stoppers, sand bath and tripod.....	1 25	1 45	1 60	1 70	2 25	2 65

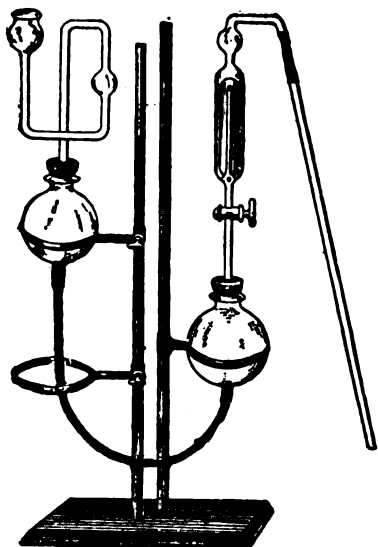
1541—Ditto, for generating Gases, especially **Chlorine Gas**, according to Kaehler .....

\$ 7 50

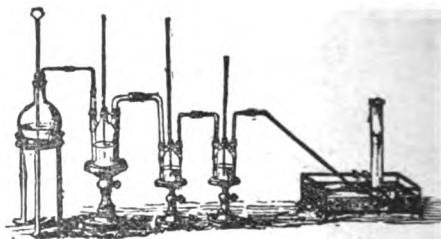
\*1541/1—Ditto, ditto, with support .....

11 25

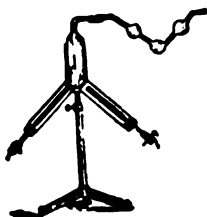
REMEMBER OUR DISCOUNT.



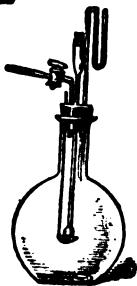
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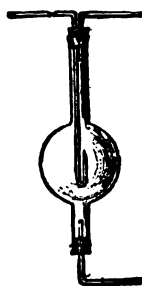
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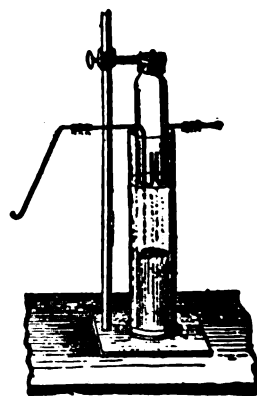
1545/1



1551



1552



1538

\*1545/1—**Apparatus**, Hawliczek's, with carbon electrodes, for the production of Chlorine Detonating Mixture; with adjustable support .....

9 00

\*1550—**Apparatus**, for making Chlorine Water, Ammonia or Hydrochloric Acid: consisting of a lit. flask, three  $\frac{1}{4}$  lit. Wulf's bottles with three necks and connecting tubes, with rubber stoppers, and flask with safety tube.

Without stand .....	\$5 30
With tripod and sand bath .....	6 25
With iron 3-ring stand and sand bath.....	6 85
With iron 3-ring stand, sand bath and burner.....	7 65

\*1551—Ditto, to demonstrate the increase of weight by combustion.....

3 45

\*1552—Ditto, illustrating the combustion of one gas in another .....

2 00

1555—**Apparatus**, Diffusion, according to Bunsen (see Gasometrische Methoden) .....

7 50

**\*I 1557/1—Apparatus, Digesting, (Autoclav).**

High pressure steam digester for sterilization, with copper boiler, bridge clamp and central screw, with hood of phosphorus bronze or brass, ring-washer inlaid with lead, safety valve, steam stop-cock, manometer, mantle of forged iron resting on 3 legs, and screw-wrenches. Without gas-burner. (Illustr. p. 28)

Diameter	45	45	45	60	90	90	100	100mm
Height	130	200	250	180	200	250	200	250mm
Tested for 25 Atmospheres,	\$68 88	72 50	73 95	76 13	81 20	83 38	87 00	94 25
“ 50 “	81 20	87 00	88 45	90 63	105 13	116 00	108 75	126 88
“ 100 “	126 88	134 13	134 13	136 38	174 00	181 25	188 50	203 00
If imported duty free. { 25 “	47 50	50 00	51 00	52 50	56 00	57 50	60 00	65 00
{ 50 “	56 00	60 00	61 00	62 50	72 50	80 00	75 00	87 50
{ 100 “	87 50	92 50	92 50	97 50	120 00	125 00	130 00	140 00
Diameter				120	120	150	170	200mm
Height				200	250	200	220	250mm
Tested for 25 Atmospheres				94 25	119 63	123 25	177 63	210 25
“ 50 “				137 75	152 25	213 88	275 50	279 13
“ 100 “				217 50				
If imported duty free. { 25 “				65 00	82 50	85 00	122 50	145 00
{ 50 “				95 00	105 00	147 50	190 00	192 50
{ 100 “				150 00				

Any Digesting Apparatus, tested for a lower or higher pressure up to 200 Atmospheres furnished to order at lowest rates.

**\*1558—Apparatus, Digesting (Autoclav).** For steam sterilization at high temperatures. It has been constructed on the relation of pressure to temperature, and is provided with a pressure gauge which reads to thirty pounds pressure per square inch above that of the atmosphere. Higher pressures may be used if desired, as the apparatus is tested beyond the gauge pressure. A pressure of 30 pounds to the square inch on the gauge corresponds to a temperature of 134.6 degrees Centigrade, which is more than sufficient for such use. A thermometer is provided so that the temperature may be ascertained independently of the pressure. The articles or their containers are placed on a low perforated frame in the apparatus. The boiler is made entirely of one piece of copper, hence there are no seams on the sides or bottom. None of the valves are attached to the boiler, and there are no joints or connections to leak. Thermometer, pressure gauge, and the valves for the escape of air and steam (when used as an ordinary steam sterilizer) are connected independently to the interior through the lid. The safety valve may be set to operate at any desired point. The cover is of cast brass, hinged and fastened steam-tight by clamps, with packing of vulcanized material. The apparatus is made without jacket; the inside surface of the lid is tinned, and the exterior has an aluminum finish. The clamps, the number of which vary with the sizes, are of improved construction. The base is of sheet-iron over an iron framework. A ring Bunsen burner is permanently fixed to the base, making the apparatus complete. (Illustr. p. 28)

Inside height of boiler exclusive of cover, cm., }	-	30	50	66
Inside diameter, cm.,	-	20	25	33
Each, - - - - -	\$66 65	87 65	106 65	

**\*1559—Apparatus, Digesting (Autoclav).**

This apparatus is for sterilization under steam pressure.

The boiler is made of extra heavy copper, tin-lined, is 60 cm. deep and 28 cm. in diameter, with a perforated rack inside.

The lid is made of cast brass and nickel-plated. It is made with a ground joint, no washers being necessary to make it steam-tight; it is held in position by six screw clamps.

The apparatus is tested and guaranteed to stand pressure of 50 pounds to the square inch, (3½ Kilo to the square centimeter) is provided with a pressure gauge, thermometer and safety valve; the latter is set at 30 pounds, but may be increased or decreased. There is a small pet valve which must be kept open until the steam escapes, thereby forcing all the air out of the boiler.

The base is made of sheet iron and is 20 cm. high, extreme height of the apparatus is 102 cm. (Illustr. p. 28)

Autoclav or Digester, including three-tube burner..... \$90 00

**\*1560—Apparatus, displacement, Guibourg's. (Illustr. p. 28)**

500cc	1 lit.	2 lit.	4 lit.
\$4 70	5 90	6 85	9 35

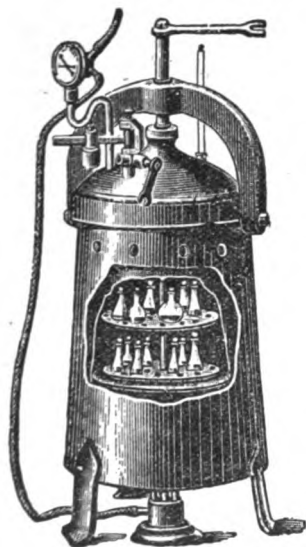
**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*1560/1—Apparatus, displacement, Guibourg's the upper glass part alone. (For prices see No. 5497.)

For	500cc	1 lit.	2 lit.	4 lit. size
Capacity	300	540	1000	2000cc

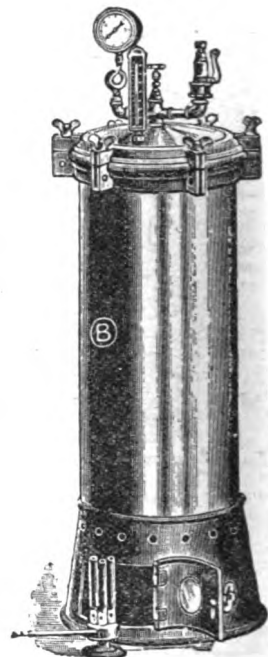
REMEMBER OUR DISCOUNT.



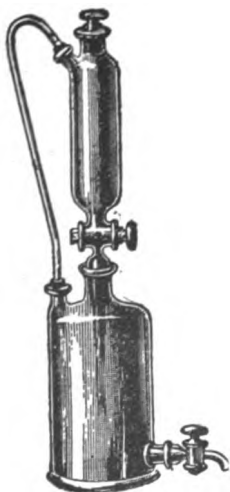
1557/1



1558



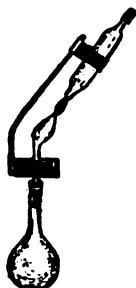
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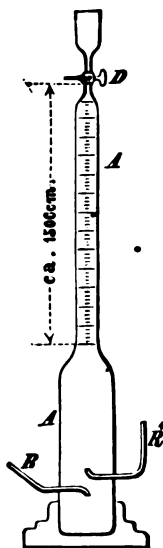
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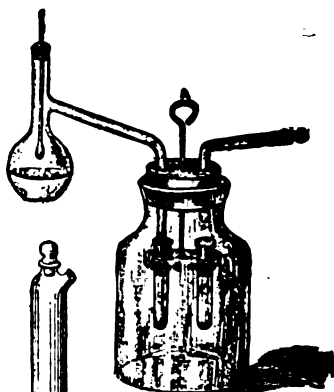
1570



1571



1572



1575



1560/1

\*1570—Apparatus, displacement, Robiquet's.

Capacity 30cc each, 75 cents; 150cc each .....

\$ 90

\*1571—Apparatus, for displacing Gases contained in water and collecting them, according to Jacobsen and Behrens; glass parts.....

2 15

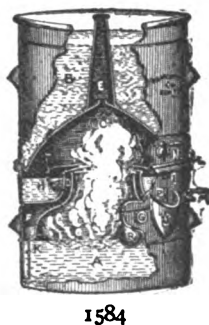
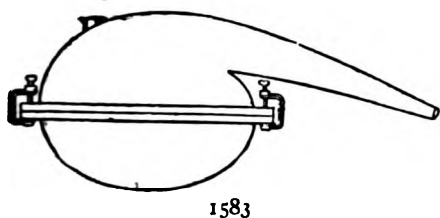
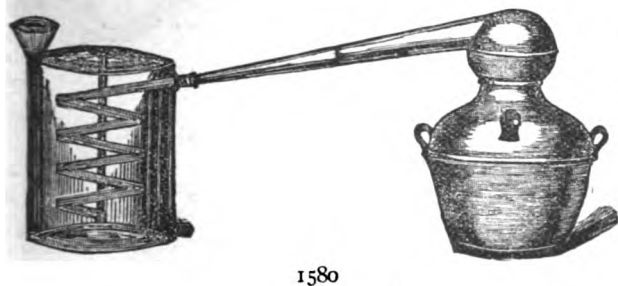
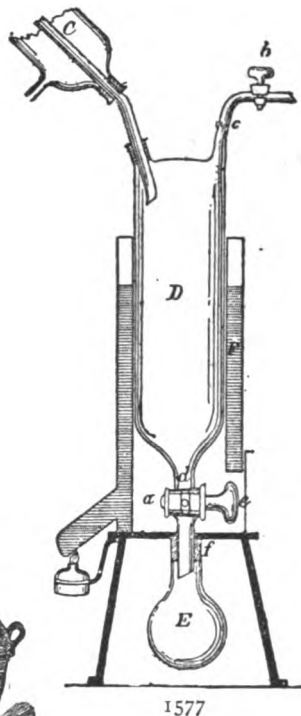
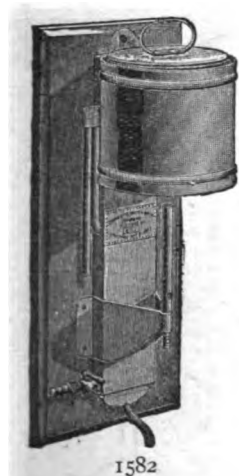
\*I 1572—Ditto, for the absorption and analysis of Gases dissolved in water, Thorne's.....

6 85

\*1575—Apparatus, for fractional distillation under diminished pressure....

3 75

- \*I 1576—**Apparatus**, for fractional distillation under diminished pressure, Meyer's (*Fresen. Zeitschr.*, 1890, p. 172) ..... \$ 6 25
- \*I 1577—**Apparatus**, for distilling under diminished pressure, Valenta's (*Fresen. Zeitschr.*, 1880, vi, p. 676); glass parts only ..... 6 65
- \*1580—**Apparatus, Distilling**, made of heavy copper, tin-lined, with movable head, connected with pure block-tin condensing worm, enclosed in zinc vessel, with proper inlets, tubulated, of very fine finish.
- |                      |         |        |        |         |         |
|----------------------|---------|--------|--------|---------|---------|
| Approximate capacity | 2 lit.  | 4 lit. | 8 lit. | 12 lit. | 20 lit. |
| Each                 | \$10 65 | 13 35  | 17 50  | 23 00   | 30 00   |



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

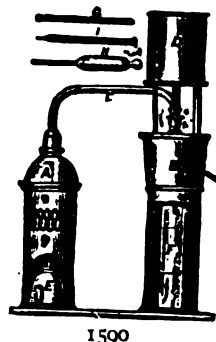
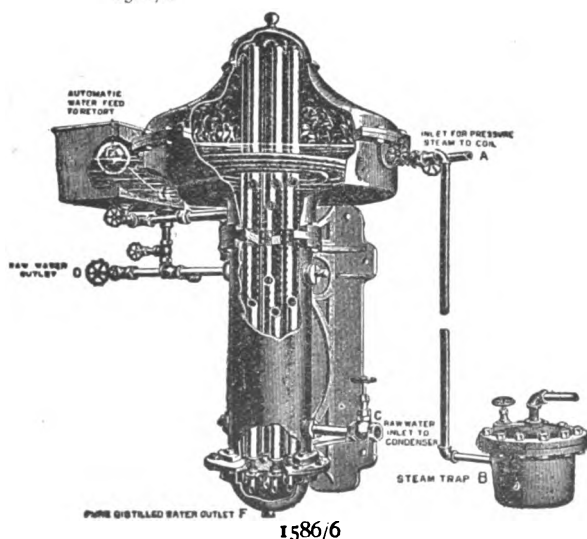
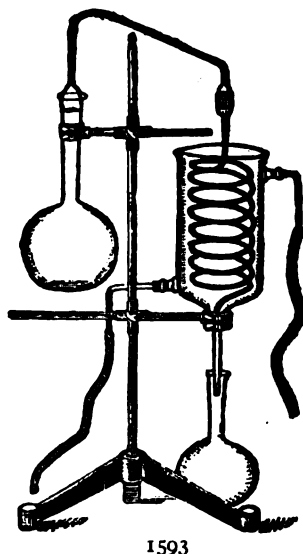
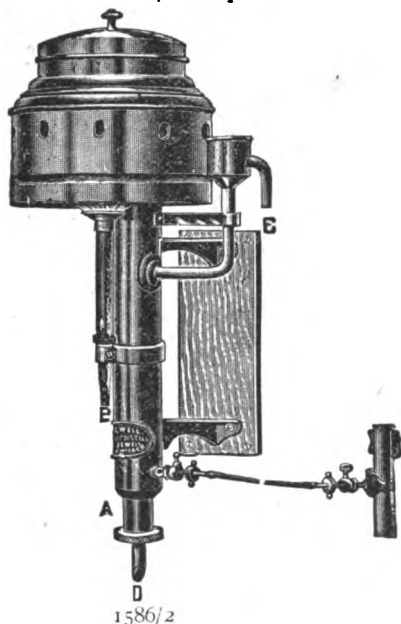
- \*1582—**Apparatus, Distilling**, called "Domestic Water Still." Automatic; size A—40 cm. long; retort, 13 cm. in diameter; burner consumes 6 feet (=0.17 Cubic-Meter) of gas per hour. Produces 50 lit. of distilled water in twenty-four hours. 25 00
- 1582/1—Ditto, ditto, size B—45 cm. long; retort, 18 cm. in diameter; burner consumes 14 feet (=0.39 Cubic-Meter) of gas per hour. Produces 122 lit. of distilled water in twenty-four hours. 41 65
- \*1583—**Apparatus, Distilling**, of heavy copper, with brass flanges, secured by strong clamps; for aldehyde, tar, etc.
- |                      |         |        |        |         |
|----------------------|---------|--------|--------|---------|
| Approximate capacity | 2 lit.  | 4 lit. | 8 lit. | 12 lit. |
| Each                 | \$33 30 | 41 65  | 50 00  | 62 50   |

**\*\*1584—Apparatus, Distilling, "Ralston."** This Still is the best automatic distilling apparatus in the market. It is built throughout of cold-rolled planished copper. The interior surfaces are lined with pure block-tin, and will not corrode or rust. It can be heated on any stove or by any burner. (Descriptive Circular mailed on application.) (Illustr. p. 29)

Aerating Caps for use on Mason Jars, containing distilled water.  
Each 42cts.: per doz .....

\$16 65

3 30



**1586—Apparatus, Distilling, Jewell's.** Cast-iron with brass trimmings, condensing tube of heavy double tinned copper; capacity about 2 liters per hour. No. 3 .....

1586/1—Ditto, ditto, ditto, with glass reservoir  $9\frac{1}{2}$  liters .....

\*1586/2—Ditto, ditto, of polished copper and brass throughout, tin plated on the inside; capacity about 2 liters per hour. No. 4 .....

1586/3—Ditto, ditto, ditto, with glass reservoir  $9\frac{1}{2}$  liters .....

Larger Jewell Stills furnished at lowest prices, which will be submitted on application.

15 00

22 50

27 00

34 50

REMEMBER OUR DISCOUNT.

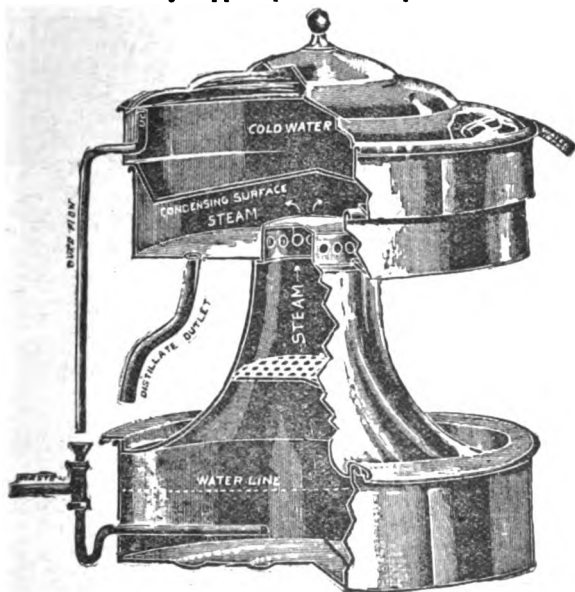


- \*1586/6—**Apparatus, Distilling; Jewell's Patent Water Still No. 7.** Capacity 56 to 57 liters per hour under a boiler steam pressure of 27 Kilos (60 lb.) on the heating coil as shown in illustration. The distilled water is not flat like a common boiled water for the reason that the oxygen rising with the vapor upon evaporation of the water is re-united with the distilled water upon condensing. This distilled water is therefore palatable. (Illustr. p. 30) ..... \$450 00

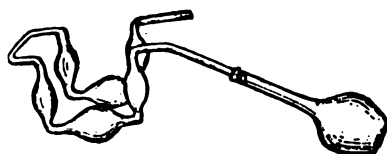
Same with 380 liter polished copper tin-lined storage tank ..... 575 00

We can also furnish Jewell's Patent Steam Stills in smaller and larger sizes, but somewhat different in appearance. Prices on application.

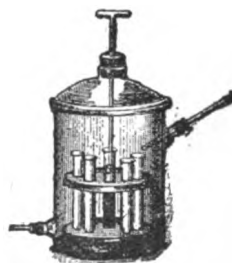
- \*1587—**Apparatus, Distilling. McKenna Indestructible Automatic Water Still.** For laboratory and domestic use. To operate the Still, it is placed on a tripod over a Bunsen burner or other suitable source of heat. It is 28 cm. in diameter and 33 cm. high, made of heavy nickel plate polished. Over a burner using 0.280 Cbmtr. (—10 cubic feet) of gas an hour it will deliver about 3 liters an hour. It is made of heavy copper spun into shape with no soldered seam ..... 22 50



1587



1592



1595

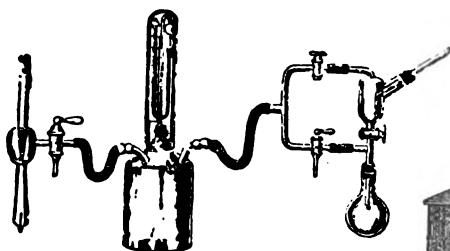
- \*1590—**Apparatus, Distilling, (Monitor Still),** small, of copper, with support and brass lamp E, condenser B and D, hydrometer H, thermometer G, pipette I, graduated jar F and computation table. A very convenient instrument for determining the percentage of alcohol in wine, beer, etc. In wooden box (Illustr. p. 30) ..... 11 25
- 1591—**Apparatus, Distilling (Alembic Salleron),** all glass, complete with iron 2-ring Stand. **Parts:** Alembic No 1260-250cc. Condenser with worm No. 4330, 25x5 cm., Thermometer, Hydrometer, Pipette, Graduated Jar, Spirit Lamp and computation table. Used for the same purpose as the foregoing ..... 7 50
- 1591/1—Ditto, ditto, in wooden box ..... 8 00
- \*1592—**Apparatus, Distilling,** according to Thorne ..... 3 75
- \*1593—**Apparatus, Distilling,** of glass according to Muencke, with ground joints. (Illustr. p. 30)
- |                              |                     |         |
|------------------------------|---------------------|---------|
| Capacity                     | $\frac{1}{2}$ liter | 1 liter |
| Without support              | 7 50                | 9 35    |
| With support, and two clamps | 10 60               | 12 45   |
- \*I 1594—**Apparatus, Distilling,** according to Kolbe, for fractional distillation under diminished pressure as illustrated. (Illustr. p. 32) ..... 16 85
- \*I 1595—**Ditto, Bruehl's Receiver for distillation in vacuo.**
- |                                 |       |
|---------------------------------|-------|
| With 5 cylinders 25cc. capacity | 9 00  |
| With 5 cylinders 40cc. capacity | 13 00 |
| With 5 cylinders 80cc. capacity | 16 00 |

**\*I 1601—Apparatus, Distilling and Steam.**

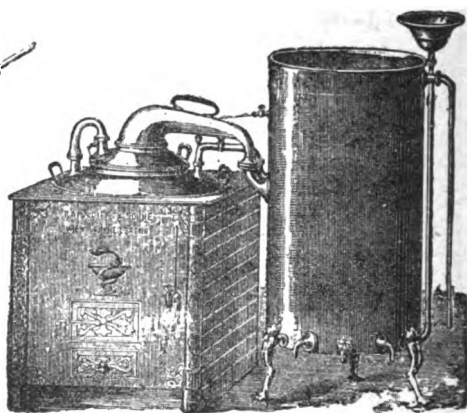
Retort of Tin	21 liters	} Complete without fire-brick .....	\$475 00
Copper Steam Vessel	60 liters		
Copper Condenser	140 liters	} Complete without fire-brick .....	430 00
Retort of Tin	21 liters		
Copper Steam Vessel	60 liters		
Zinc Condenser	140 liters		

If Imported  
duty free.  
\$330 00

305 00

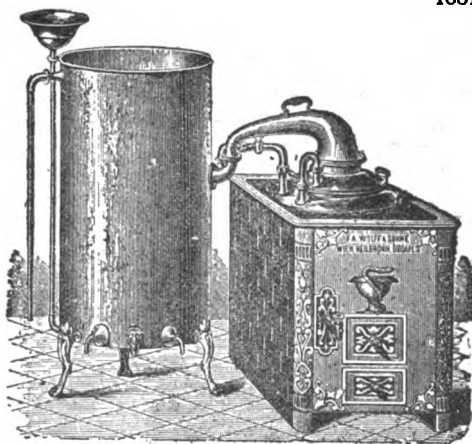


I 594



I 601

REMEMBER OUR DISCOUNT.



I 602

**\*I 1602—Apparatus, Distilling and Steam.**

Retort of Tin	14 liters	} Complete without fire-brick .....	355 00
Copper Steam Vessel	40 liters		
Copper Condenser	100 liters	} Complete without fire-brick .....	320 00
Retort of Tin	14 liters		
Copper Steam Vessel	40 liters		
Zinc Condenser	100 liters		

If Imported  
duty free.  
250 00

225 00

**\*I 1603—Apparatus, Distilling and Steam. (Illustr. p. 33.)**

Retort of Tin	8 liters	} Complete as per illustration.....	200 00
Copper Steam Vessel	18 liters		
Copper Condenser	55 liters	} Complete as per illustration.....	185 00
Retort of Tin	8 liters		
Copper Steam Vessel	18 liters		
Zinc Condenser	55 liters		

If Imported  
duty free.  
145 00

135 00

**\*I 1604—Apparatus, Distilling and Steam, large, for superheated steam, in connection with a stirring apparatus, a vacuum apparatus with filter-pump, condenser and an apparatus for hot filtration. (Illustr. p. 33)**

Complete as per illustration.....\$2700 00  
If Imported duty free.....1875 00

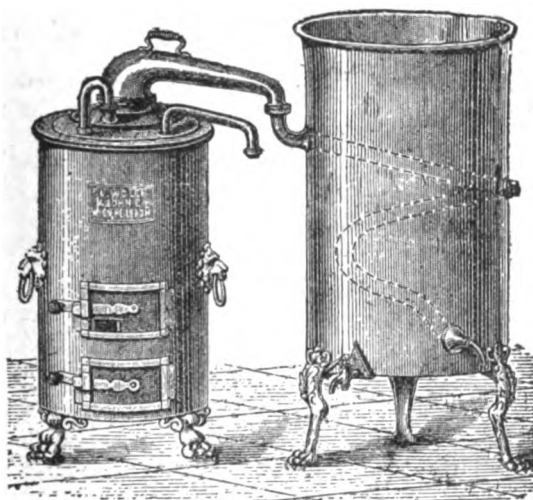
**\*I 1605—Apparatus, Distilling and Steam, large pharmaceutical.**

Complete, without fire-brick, as per illustration.

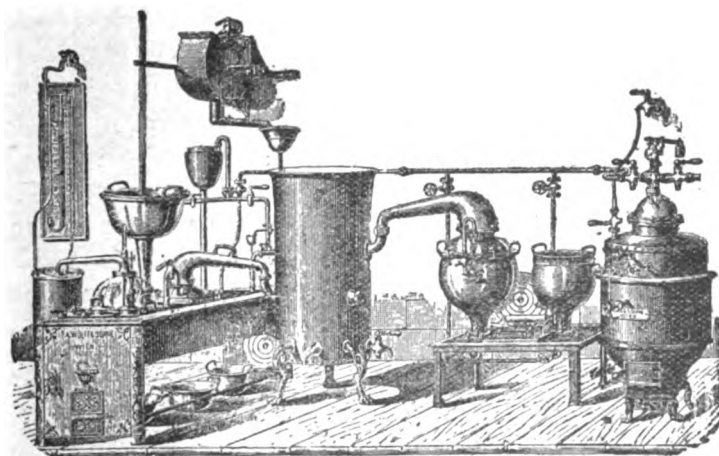
**If Imported  
duty free.**

(Illustr. p. 34)

With copper condenser.....	\$990 00	\$695 00
With zinc condenser.....	875 00	615 00



1603



1604

**\*I 1606—Apparatus, Distilling and Steam, medium pharmaceutical, with separate distilling apparatus. Complete without fire-brick, as per illustration. (Illustr. p. 34)****If Imported  
duty free.**

With copper condenser.....	630 00	445 00
With zinc condenser.....	565 00	400 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

\*I 1607—**Apparatus, Vacuum**, of highly polished copper, tinned inside, on iron support, with vacuum gauge, thermometer, air-cock, steam valve, discharge-cock, etc. (Illustr. p. 35)

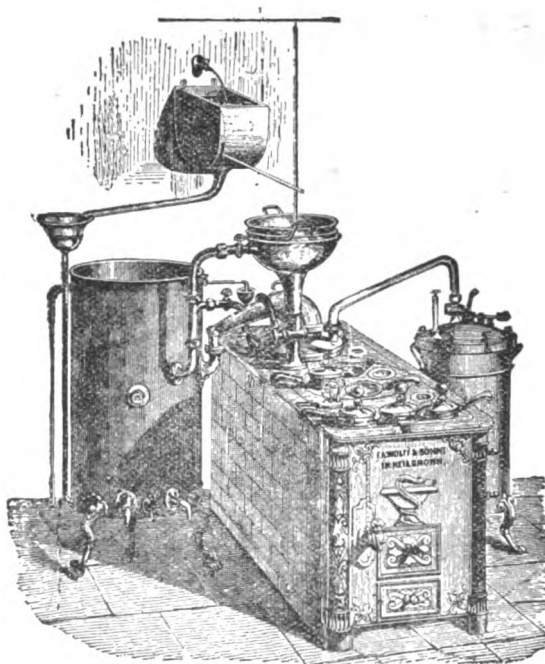
Capacity .....	12	20	30	40	50 liters.
<b>Price without air-pump</b> .....	\$390 00	420 00	480 00	530 00	565 00
Capacity .....	60	80	100		125 liters.
<b>Price without air-pump</b> .....	585 00	640 00	705 00		760 00
Capacity .....	150	200	250		300 liters.
<b>Price without air-pump</b> .....	850 00	1020 00	1255 00		1420 00

The air-pump for a 100-liter capacity, extra ..... \$415 00

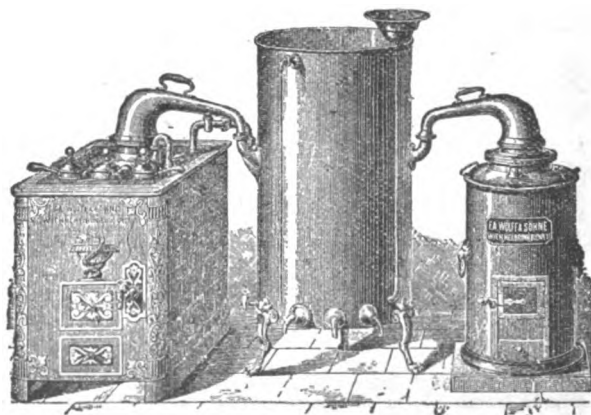
**Full information regarding Apparatus No. 1601 to No. 1607 given on application.**

**Any Laboratory Apparatus imported to order at lowest rates.**

REMEMBER OUR DISCOUNT.



1605



1606

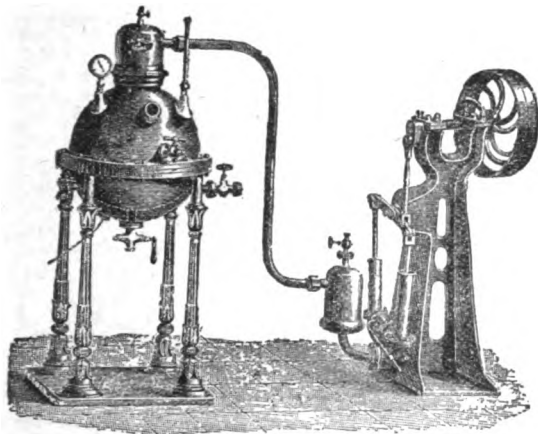
\*1620—Ditto, for fractional distillation, Regnault's of copper and brass, **with thermometer**. (Illustr. p. 35)..... \$21 85

\*1630—**Apparatus, Distilling, of Platinum.** A retort, with tubulated head, funnel tube and condensing worm. Any size made to order. At lowest market price.

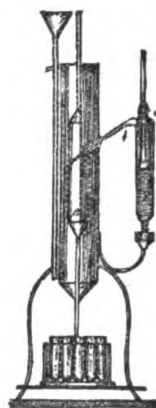
**Apparatus, Distilling, of Platinum.** Any form or size furnished to order at lowest market price.

\*I 1631—**Apparatus, Drying,** according to Habermann and Zulkowsky. For primary desiccation of substances in vacuum in organic analysis. (See page 36.) Prices do not include the vacuum gauge.

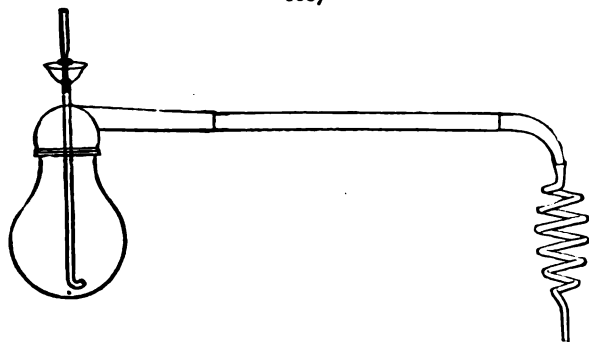
The glass parts only .....	\$3 65
With support with clamp and ring .....	7 25
With two supports and filter-pump .....	11 85



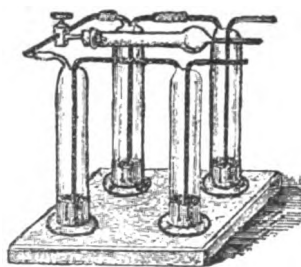
1607



1620



1630



1632

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*1632—**Apparatus, Drying,** Bennert's, as used in the Bonn Laboratory.

The four glass cylinders fastened in a wooden base..... \$10 00

1633—Ditto, ditto, ditto. The tubes not fused in, but fastened by rubber stoppers. Complete on wooden base..... 10 00

\*1634—Ditto, ditto, according to Liebig & Mitscherlich, with oil bath, tripod and air-pump, complete. (Illustr. p. 36)..... 33 00

\*1636—Ditto, ditto, according to Glaser, for drying gases in elementary analysis. (Illustr. p. 36)..... 11 25

\*I 1637—**Apparatus, Drying,** according to Anschuetz. (Illustr. p. 36)..... 9 35

\*I 1638—**Apparatus, Drying,** according to Taeuber, for organic analysis. (Illustr. p. 36)..... 16 00

\*1639—**Apparatus, Drying, (Oil Bath),** according to Fresenius, of heavy, hard soldered copper, with double walls. Dimensions, 10x10x10 cm. inside, 15x12x15 cm. outside. (Illustr. p. 36)..... 16 00

\*1640—**Apparatus Drying,** (drying bath) of tin, with double walls, 15x20 cm. (Illustr. p. 36)..... 3 10

\*1650—**Apparatus, Drying,** of Copper with double walls, very substantial, with four legs and extra iron bottom. (Illustr. p. 36.)

15x20 cm.

\$9 55

20x25 cm.

12 15

25x30 cm.

16 75

\*1660—Apparatus, Drying, of Copper, with double walls, with Prof. Kekule's water regulator and **four legs and extra iron bottom.**

15x20 cm.

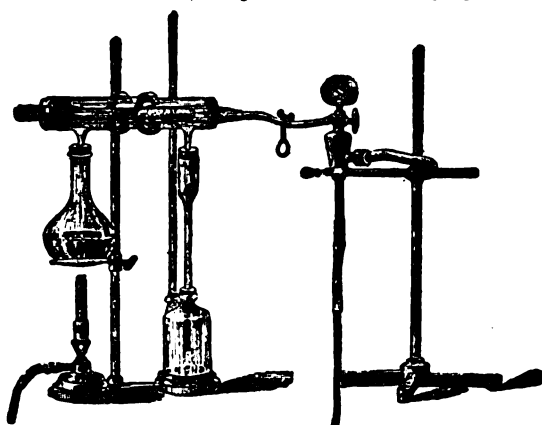
20x25 cm.

25x30 cm.

\$10 65

13 15

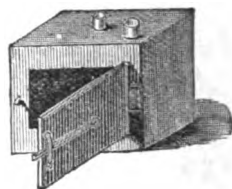
17 75



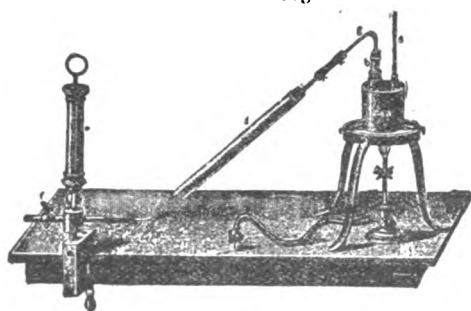
1631



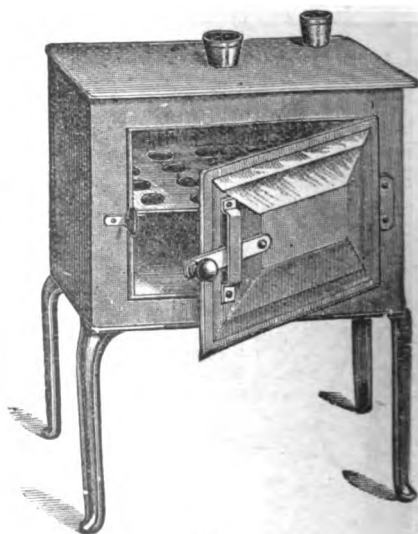
1638



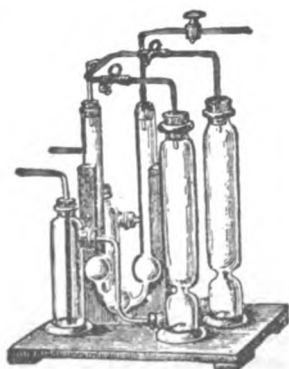
1639 &amp; 1640



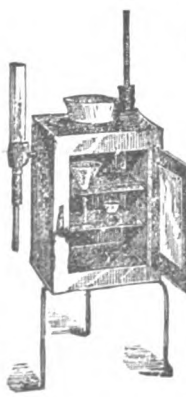
1634



1650



1636



1670



1637



1660

\*1670—Apparatus. Drying, (drying bath) of copper, with double walls, with Prof. Kekule's water regulator, **four legs**, extra iron bottom, and water bath on top.

15x20 cm.

20x25 cm.

25x30 cm.

\$13 15

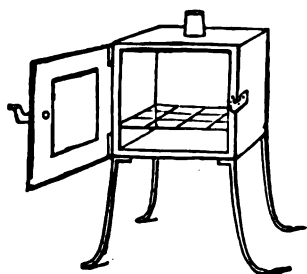
15 65

20 25

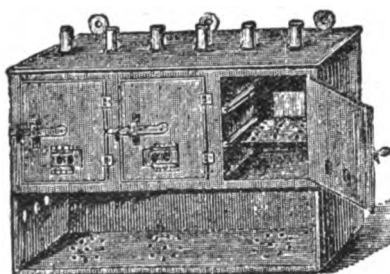
REMEMBER OUR DISCOUNT.

- 1680—**Apparatus, Drying**, of cast iron, with double walls, complete with legs, japanned, 20x25 cm. fig. 1650 ..... \$10 00
- 1681—Ditto, ditto, nickel-plated, 20x25 cm. fig. 1650 ..... 10 75
- \*1690—**Apparatus, Drying**, (drying oven), Fresenius', of copper, single walls, of new and improved construction, very substantial, with double bottom, one of which being iron can be replaced if burned through. With legs and extra iron bottom.  
     15x20 cm.                      20x25 cm.                      25x30 cm.  
     \$6 15                          8 40                          11 65
- 1694—Ditto, ditto, same as No. 1690, made of Aluminium 15x15x25 centimeters ..... 16 00
- 1695—**Apparatus, Drying**, (drying oven), made of sheet iron, with sliding front of glass, 16.5x12.5x15cm. .... 3 75
- 1700—Ditto, ditto, of cast iron, with single walls, and legs, japanned, 20x25 cm., fig. 1690 ..... 7 00
- 1701—Ditto, ditto, ditto, nickel-plated, 20x25 cm., fig. 1690 ..... 7 50
- 1710—Ditto, ditto, School of Mines pattern, a copper box 25x25x30 cm., enclosed in sheet iron box, with heating coil; very desirable for laboratories ..... 40 00

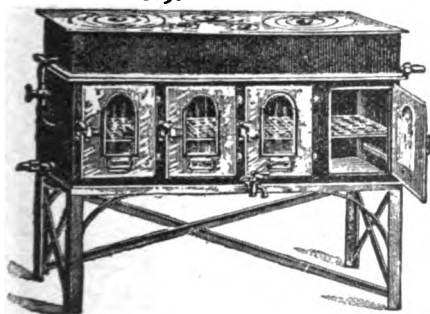
**Glass or Mica Windows inserted in any of above Copper Drying Baths or Ovens at an Additional Cost of 80 cents.**



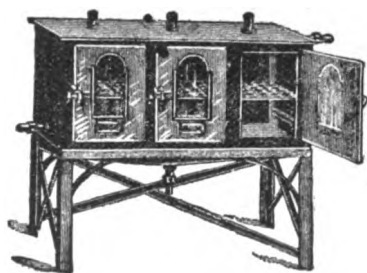
1690



1711



1712/1

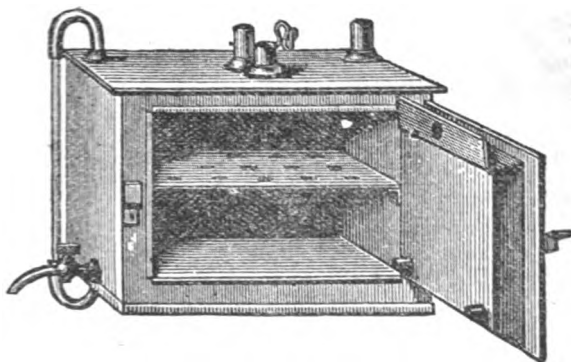


1712/2

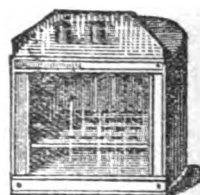
- \*1711—**Apparatus, Drying**, for drying precipitates, etc.; of heavy copper, with three chambers, separate doors, with registers for each chamber and with movable shelves. Size of chambers 18 cm. by 18 cm. by 21 cm. high, each having two tubulatures on top. The whole apparatus is 53 cm. long, 21 cm. high and 18 cm. deep and rests on iron support of about the same dimensions, open in front. .... 25 00
- \*I 1712/1—**Apparatus, Drying**, for large laboratories, with water-bath on top, for the instantaneous production of distilled water. It consists of 4 compartments, each 25 cm. high, 20 cm. wide and 20 cm. deep, each compartment fitted with a perforated movable shelf, which can be used in two positions, 4 doors with movable pans of glass. All inside parts are tinned. The water bath has 2 openings 22 cm. in diameter, 2 openings of 15 cm. diameter, and 1 opening, 10 cm. diameter, with rings and covers. The heating of the water-bath is effected by a perforated tube of brass in the upper part, through which as much steam as required may be admitted by means of a side stop-cock. There is a delivery stop-cock in the center of the front part of the apparatus, by which the distilled water can be drawn off. The apparatus is of heavy copper and has an iron support. Length 102 cm., depth 25 cm., height 48 cm., total height 85 cm. .... 200 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

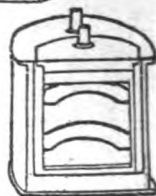
- \*1712-2—**Apparatus, Drying**, same as No. 1712/1, with 3 compartments, each 25 cm. high, 20 cm. wide and 20 cm. deep, **WITHOUT WATER-BATH**. Total length 78 cm., height 34 cm., depth 25 cm., complete on support with four legs. (Illustr. p. 37) ..... \$115 00
- \*1714—**Apparatus, Drying**, according to Carius, made of copper, with 2 tubulatures and sliding front of glass ..... 4 50
- \*1715—Ditto, ditto, of copper, double wall with two shelves. A cylindrical vessel without seams, which makes it very serviceable for use with oil or paraffine. Dimensions, 20 x 20 cm ..... 12 00
- \*1716—Ditto, ditto, copper, double walls, according to Rohrbeck, with continual air draft, water gauge, stop cock and double-wall door for Chloride of Calcium, to dry the air before entering the oven. Height, 22½ cm.; depth, 20 cm.; length, 29 cm ..... 33 00



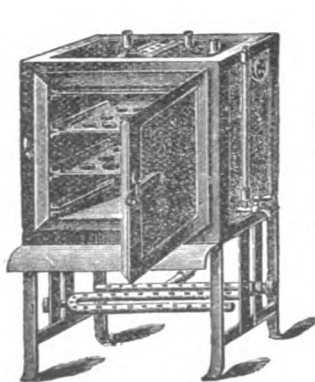
1716



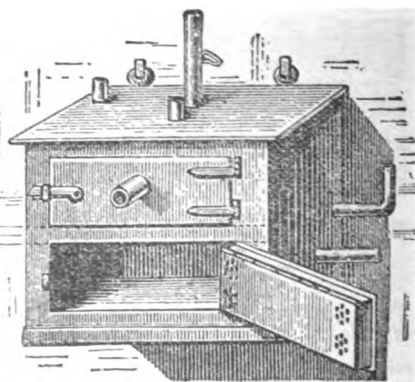
1714



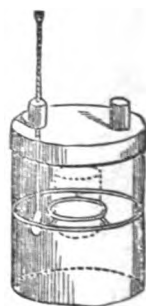
1715



1721



1717



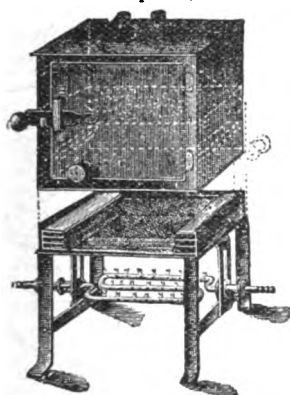
1720 &amp; 1720/1

- \*1717—Ditto, ditto, copper, double walls, according to Rohrbeck, improved construction with continual air draft, water gauge, stop-cock and two compartments. Height, 24 cm.; depth, 20 cm.; length, 27 cm. .... 42 50
- \*1720—**Apparatus, Drying**, Rammelsberg's, of copper, cylindrical shape, two tubulatures in top cover, large; height, 13.5 cm.; diameter, 11 cm. .... 4 75
- \*1720/1—Ditto, ditto, height 11 cm., diameter, 9 cm ..... 3 75
- \*1721—**Apparatus, Drying, for uniform temperatures up to 100° C.** Double walls, the outside wall consisting of steel plate with asbestos covering to prevent radiating of heat, the second and third of heavy copper for holding the water. The heating gases pass around the empty space between the second and third wall and escape through the perforated air regulator in the cover. The temperature can easily be regulated by means of air valves on two sides of the apparatus. Inside dimensions 25 cm. wide, 15 cm. deep, 20 cm. high ..... 66 75  
 " " 30 cm. wide, 20 cm. deep, 25 cm. high ..... 100 00

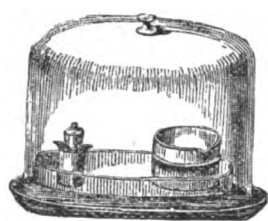
REMEMBER OUR DISCOUNT.



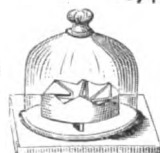
- \*I 1722—**Apparatus, Drying, according to Prof. F. Ruedorf** of heavy copper, wrought iron support, tube burner, with arrangement for inserting wire gauze between support and case. Outside dimensions, 25 cm. wide, 15 cm. deep, 20 cm. high ..... \$ 25 00
- \*I 1722/1—Ditto, ditto. Outside dimensions, 50 cm. wide, 30 cm. deep, 30 cm. high ..... 73 00
- 1722/2—Ditto, ditto, same as No. 1722, but without arrangement for inserting wire gauze ..... 20 00
- 1722/3—Ditto, ditto, same as 1722/1, but without arrangement for inserting wire gauze ..... 59 00
- \*I 1723—**Apparatus, Drying, Prof. Soxhlet's**, for the rapid determination of moisture. Outside dimensions, 52 cm. long, 16 cm. wide, 16 cm. high, of heavy copper, with eight inserted tubes, water gauge, globe-shape condenser of brass, nicke-plated outside and tinned inside, five nickel dishes, one cover and one shovel; iron support. A determination of the total solids in milk can be made in **18 minutes**. Complete, but without burner ..... 90 00



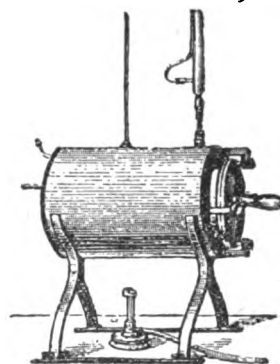
1722 &amp; 1722/1



1740

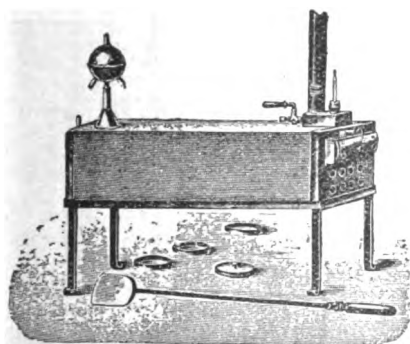


1730

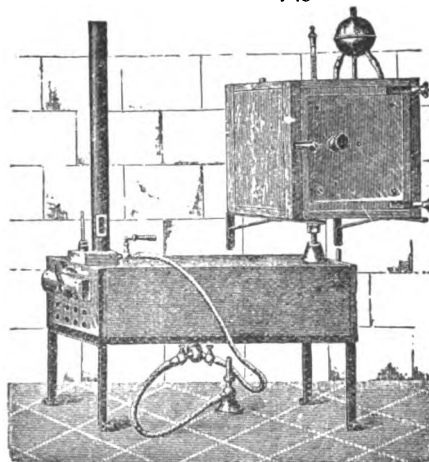


1743

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



1723



1723/1

- \*I 1723/1—Ditto, ditto, connected with a double-wall drying oven of heavy copper, inside space 25 x 25 x 25 cm., with felt packing, asbestos covered, door with spring hinges and latch, and arrangement for fastening to the wall. Complete, but without burner ..... 156 00
- \*1730—**Apparatus, Drying**, consisting of bell-glass, ground glass plate and acid dish.  
 Bell-glass ..... 15      20      25 cm. in diameter.  
    \$3 00      3 75      5 00.
- \*1740—Ditto, ditto, Bonsdorf's, consisting of two large glass dishes, one standing inside of the other, and large bell-glass ..... 6 25
- \*1743—**Apparatus, (Drying Oven)**, for drying in a current of hydrogen, steam, etc., 40 cm. long and 25 cm. wide outside; each ..... 40 00

\*I 1744—**Apparatus, (Drying Oven), Victor Meyer's**, for drying at constant temperatures, on tripod.

Inner space. small, 7 x 6.5 medium, 9 x 8 large, 7 x 12 cm.  
Each \$12 70 14 40 16 20.

I 1745—**Apparatus**, for ascertaining the quantity of nitro-glycerine in dynamite, according to Hempel. Without support and without burettes....

\$ 8 00

I 1745/1—Ditto, ditto, without burettes, but with support.....

9 00

\*I 1745/2—Ditto, ditto, with burettes and with support.....

15 00

1750—**Apparatus**, for electrolytical analysis, consisting of 3 large Bunsen batteries, 1 platinum cone, 1 platinum cylinder, 1 platinum spiral for positive electrode [see figs. 4372 (30 grm.) and 4798 (15 grm.)], 2 supports with binding screws, connecting wires and beaker glass, usual sizes. **At lowest market price.**

\*1750/1—**Support for Apparatus No. 1750**, finely finished, with two clamps; platinum cone and spiral, shown on illustration, not included.

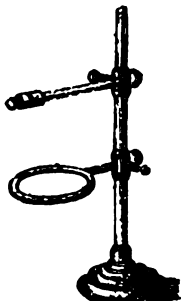
6 00

1760—Ditto, ditto, our own construction, consisting of 3 large Bunsen's batteries, a 75 mm. platinum dish, a platinum disc, 44 mm. in diameter with heavy platinum wire, 105 mm. long, attached for positive electrode, a platinum triangle, a support, properly insulated, with connecting screws, and connecting wires. **At lowest market price.**

REMEMBER OUR DISCOUNT.



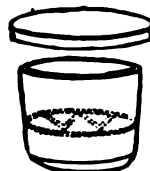
1790



1760/1



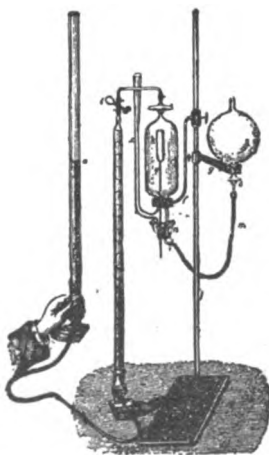
1789



1770



1744



1745/2



1750/1



1780

\*1760/1—**Support for Apparatus No. 1760**, finely finished, with ring and clamp.....

6 00

No. 1750 and 1760 can be furnished in any size and of any weight required. In ordering, please state if a special size is wanted. **Platinum parts at lowest market price.**

\*1770—**Apparatus**, of lead, for etching with hydrofluoric acid.....

6 25

\*1780—**Apparatus, Extraction, Thorn's**, for quantitative work. (See *Fresenius Zeitschrift fuer analytische Chemie.*) small, \$3 00 large,

4 10

\*1789—**Apparatus, Extraction, Soxhlet's**, with globe-shaped condenser of brass, tinned inside and nickel-plated outside. (Condenser alone, see No. 4312.) Capacity, 60 cc. 100 cc. 200 cc.

\$5 35 5 75 6 40.

**\*1790—Apparatus, Extraction, Soxhlet's with flask. (Illustr. p. 40.)**

Capacity,	60 cc.	100 cc.	200 cc.
	\$1 60	2 00	2 65

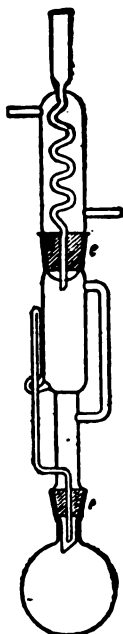
**\*1791—Ditto, ditto, ditto, with condenser and flask.**

Capacity,	60 cc.	100 cc.	200 cc.
	\$3 00	3 30	4 65

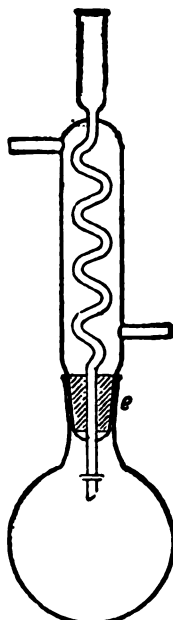
*1791/1—Ditto, ditto, Soxhlet-Szombathy's, with ground joints.....	\$7 50
*1791/2 - Ditto, ditto ditto, made entirely of glass, ground joints.....	3 75
*1792—Ditto, ditto, according to <b>Regnault</b> .....	2 35
*1793—Ditto, ditto, <b>Rempel's</b> , about 500 cc.....	4 00
*1794—Ditto, ditto, <b>Gerber's</b> .....	4 00
*1795—Ditto, ditto, <b>Storch's</b> .....	2 35



1791



1791/1



1791/2



1793



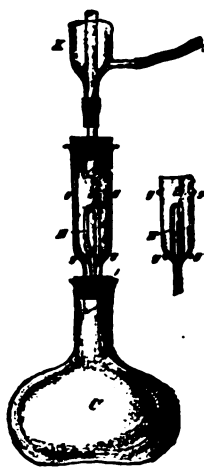
1792



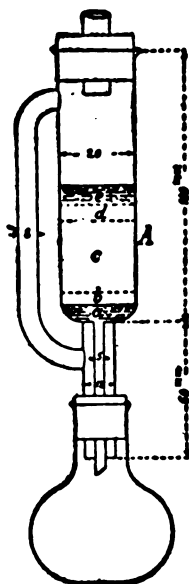
1794



1795



1799/1



1798

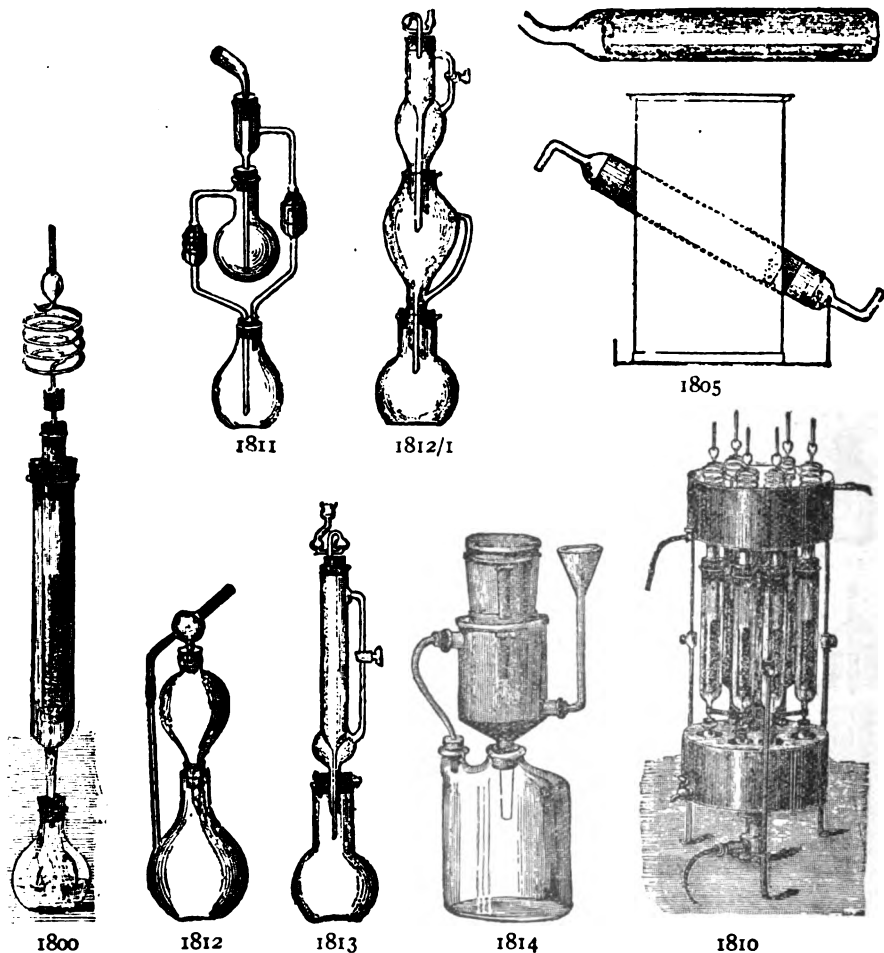
APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*I 1798—Apparatus, Extraction, Hoenig's, for extracting indigo, to estimate its value. ( <i>Fischer's Zeitschr.</i> , 1889, p. 280.).....	3 50
I 1799—Ditto, ditto, Ungerer's, for making cold extractions with continuous action. ( <i>Fischer's Zeitschr.</i> , 1889, p. 304.) Without support.....	6 65
*1799/1—Ditto, ditto, Knoepfler's, a modification of Soxhlet's apparatus. ( <i>Fresen. Zeitschr.</i> , 1889, p. 671.) Complete, with condenser, large.....	4 35

*1800—Apparatus, Extraction, according to Mohr, with condensing coil and flask; large, 250 cc .....	\$ 3 75	
*1805—Ditto, ditto, according to Caldwell. for the extraction of fat from milk, etc. It includes the following apparatus:		
1 Copper Water bath for 6 tubes .....	8 30	
3 Extraction Tubes; each .....	2 00	
6 double stoppered Tubes; each .....	2 75	
1 Platinum Disc. <b>At lowest market price.</b>		
*1810—Ditto, ditto, Mohr's, 15 cm. frame, with water bath of copper .....	56 25	
*1811—Apparatus, Extraction, according to <b>Schwartz</b> , with mercury sealed joints.		
100	250	500 cc.
\$2 50	3 10	3 75
*1812—Ditto, ditto, Drexel's.		
	250	500 cc.
	\$1 55	1 85.
*1812/1—Ditto, ditto, <b>Drexel's</b> , for repercolation .....		5 00
*1813—Ditto, ditto, <b>Wagner's</b> .....		4 35

REMEMBER OUR DISCOUNT.



*1814—Apparatus, Extraction of tin, Mohr's, 2 lit. complete .....	9 25
*1815—Ditto, ditto, of glass, for rapid extractions with small quantities of ether or alcohol. (Illustr. p 43.)	
1 lit. size complete with support .....	18 75
Glass parts alone .....	12 50
Pint size complete .....	15 00
Glass parts alone .....	10 00

- \*1816—**Apparatus, Extraction**, according to **Kreussler**, with inner cooler and 3 receiving flasks ..... \$ 4 35  
 \*1817—Ditto, ditto, **Kuehne's** ..... 1 85  
 \*1818—Ditto, ditto, **Tollen's** ..... 1 35  
 \*I 1819—Ditto, ditto, **Foerster's**, for hot extraction, with ground joints ..... 5 00  
 \*I 1819/1—Ditto, ditto, **Foerster's**, for cold extraction, with ground joints... 6 00  
 \*1820—**Apparatus**, for making carbonic acid water, according to **Liebig**, with tumbler and filling funnel.

**Approximate Capacity, 4 lit.**

16 00

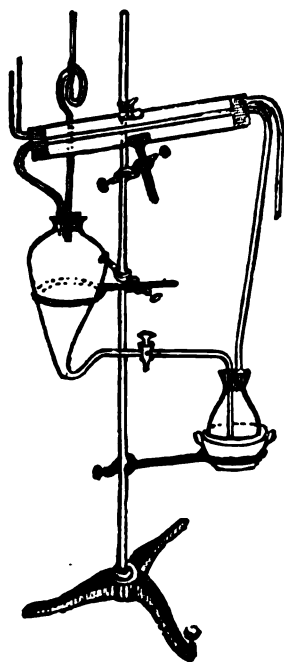
- \*1830—Ditto, ditto, French, of glass.

**Approximate Capacity**

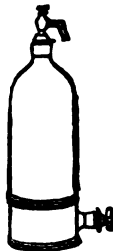
1 lit.  
\$8 35

2 lit.  
13 50

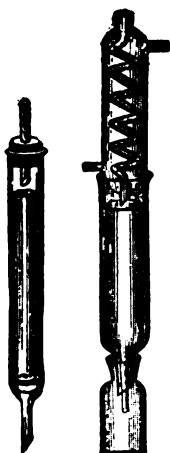
4 lit.  
17 50



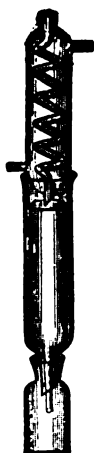
1815



1820



1818



1819



1816



1819/1



1817



1830



1831

**APPROXIMATE EQUIVALENTS:**  
 2 inch=53 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*1831—**Apparatus, Filtering, of platinum**, as used in iron analysis for holding perforated combustion boats No. 4272. Approximate weight, 24 grammes. **At lowest market price.**

- 1832—**Apparatus, Filtering**, with four platinum combustion boats No. 4272. Approximate weight, 80 grammes. **At lowest market price.**

- \*I 1833—**Apparatus, Filtering and Decanting**, according to **Saulmann**. Glass parts. (Illustr. p. 44) ..... 6 25  
 Complete with support ..... 9 35

- \*1835—**Apparatus, Filtering, Bunsen's**, for quick filtration. With brass stop-cock, 5.5 meters rubber tubing and 2 rubber stoppers. Complete with flask, funnel and 2 bottles. (Illustr. p. 44) ..... 6 25

\*1835/10—Apparatus, Freezing, according to Bruehl, for promoting the crystallization of substances in solution through cold, and to saturate liquids at low temperatures with gases.....

\$ 7 50

\*1836—Apparatus, for the determination of Fusel Oil, according to Roese. (*Repert. f. anal. Chem.*, 1886, p. 61).....

4 00

\*1836/3—Ditto, ditto, Roese-Stutzer's.....

4 65

\*1840—Apparatus, for generating gas (carbonic acid, hydrogen, etc.), of Bohemian glass, with soft rubber stopper, funnel tube and delivery tube.

125	250	350	500cc.	1 lit.	2 lit.
\$0 55	0 60	0 70	0 75	0 90	1 10

\*1841—Ditto, ditto, with washing bottle. (See also No. 1540)

125	250	350	500cc.	1 lit.	2 lit.
\$0 85	0 95	1 05	1 10	1 50	1 85

\*1842—Ditto, ditto, with funnel tube and delivery tube in one piece into the neck. Capacity,

250	500	1000cc.
1 25	1 55	1 85



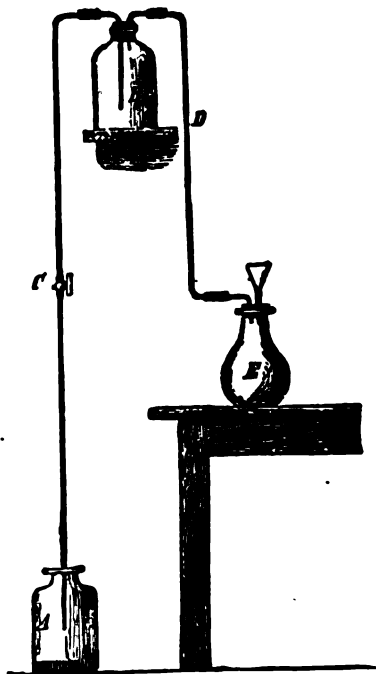
1833



1836



1836/3



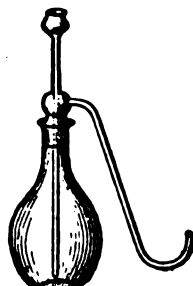
1835



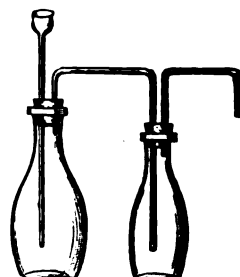
1840



1835/10



1842



1841

\*1850—Apparatus for generating gas (carbonic acid, hydrogen sulphide, etc.), consisting of a heavy glass jar, bell glass, lead tripod, brass cover and brass stop-cock, furnishing a constant supply of gas. (Illustr. p. 45.)

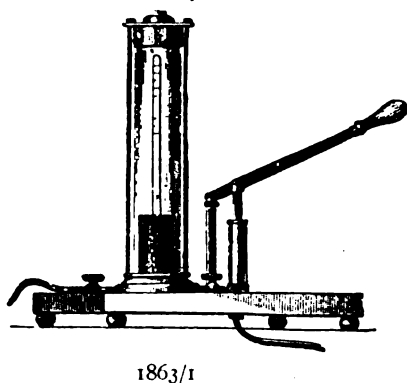
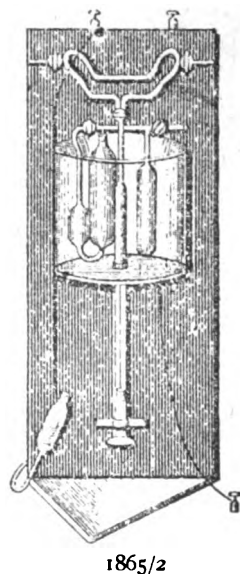
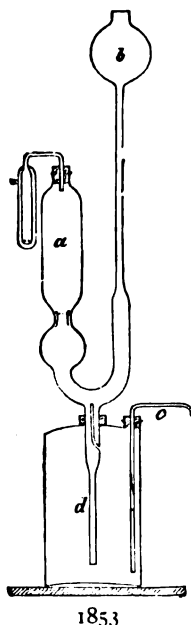
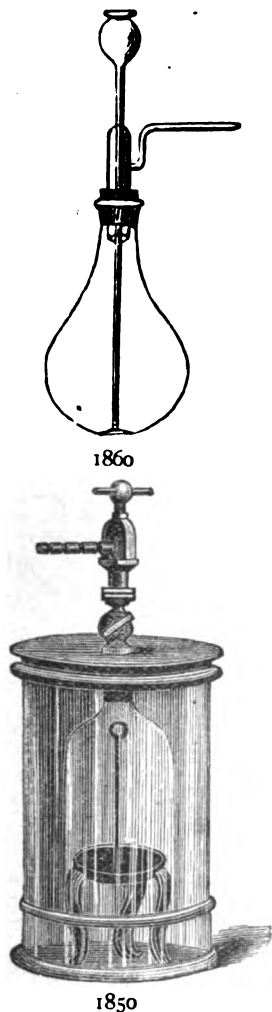
23	25	30	38cm.
\$7 00	8 35	10 75	12 50

\*1851—Ditto, ditto, as used in the Zürich laboratory. (Illustr. p. 45.)

2 lit., \$5 00	4 lit., \$7 50	8 lit., \$10 00
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REMEMBER OUR DISCOUNT.

*1853—Apparatus, according to Steenbuch, for the generation of carbonic acid, hydrogen and hydrogen sulphide .....	250	500	1000cc	\$ 6 90
*1860—Ditto, ditto, Vogel's .....	\$0 85	1 00	1 25	
1861—Ditto, ditto, ditto, with washing bottle .....	1 20	1 35	1 85	
I 1862/1—Apparatus for liquefying and solidifying carbonic acid gas, etc., with vertical cylinder, according to Natterer, with 1 flask tested for a pressure of 150atmospheres; see Müller-Pouillet, II, 2 fig. 156. Price .....				458 00
1862/2—Ditto, ditto, with horizontal cylinder .....				496 00



- \*1863/1—Apparatus for liquefying gases. A strong glass cylinder capable of bearing a pressure of twelve atmospheres, with brass base and cap, secured by iron rods; an opening in the cap admits an iron cistern for mercury, in which is inverted a tube filled with the gas for liquefying; a pump by which water is forced into the cylinder, forcing the mercury up into the tube, compressing and liquefying the gas; mahogany base, pan for water .....
- \*I 1865/2—Apparatus for the determination of carbonic acid in the atmosphere, according to Pettersen & Palmquist (Berichte der deutsch. chem. Gesell. XX, page, 2129) .....
- \*I 1866—Apparatus, for estimating the density of illuminating gas, according to Schilling. (Illustr. p. 46.) .....

62 50

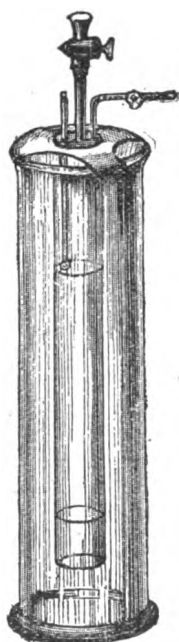
60 00

24 00

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*1867—Apparatus for determining the <b>specific gravity of gases</b> , Chancel's .....	\$ 5 00
*1868—Apparatus, for determining the <b>specific gravity of gases</b> by the rapidity of discharge, <b>Bunsen's</b> (see Gasometrische Methoden) .....	6 50
*1869—Apparatus for determining the <b>specific gravity of cement</b> , Schumann's .....	2 80

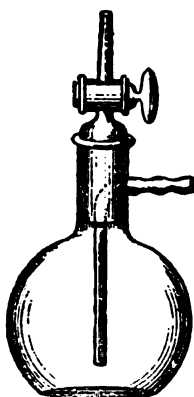
REMEMBER OUR DISCOUNT.



1866



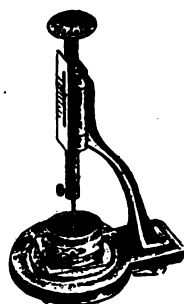
1869



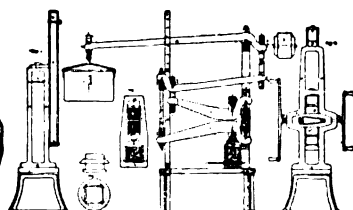
1867



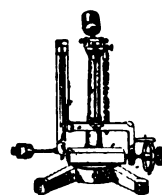
1868



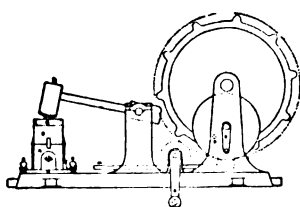
1869/3



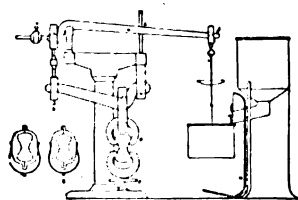
1869/6



1869/5



1869/4

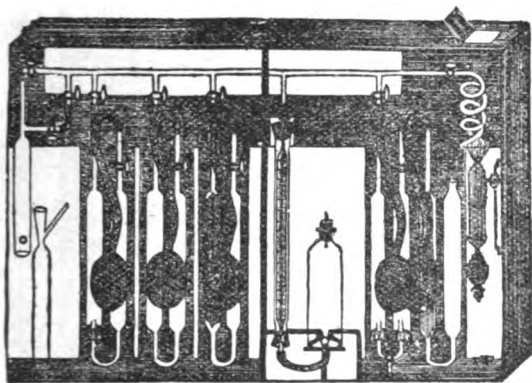


1869/7

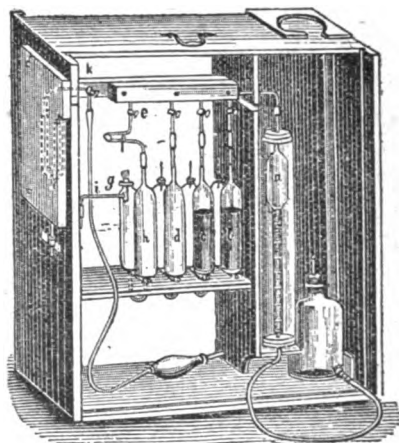
*I 1869/3—Apparatus, for testing cement. <b>Normal Needle Apparatus</b> , according to Vecat, for testing the time of setting and the proper consistency of cement; with 2 boxes and a small thermometer graduated in $1/5^{\circ}$ .....	36 00
*I 1869/4—Ditto, ditto, <b>Hammer Apparatus</b> , for preparing test pieces of cement for tensile strength or pressure tests .....	184 00
*I 1869/5—Ditto, ditto, <b>Apparatus according to Bauschinger</b> , for the determination of volume of cement in setting .....	153 00
*I 1869/6—Ditto, ditto, <b>Apparatus for determining the resistance of cement to pressure</b> , for cubes up to 1 cubic decimeter and for resistance to 50,000 Kilos; leverage 1:500 .....	934 00
*I 1869/7—Ditto, ditto. <b>Apparatus for determining the tensile strength of cement</b> . Leverage 1:50 .....	177 00
I 1869/8—Ditto, ditto, <b>Apparatus for the determination of adhesive property of cement</b> , to be used with apparatus No. 1869/7. Complete .....	85 00



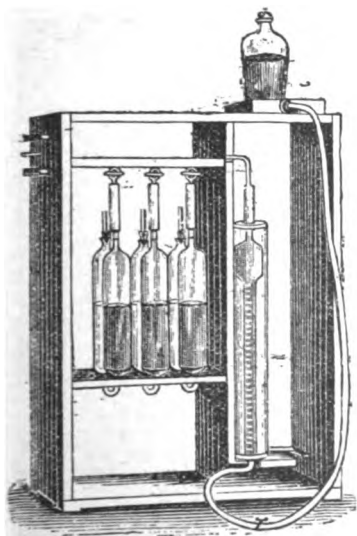
- \*1870—**Apparatus for the analysis of gases**, according to Orsat; the large, lately improved apparatus, without platinum spiral, otherwise complete..... \$ 72 00
- \*1870/1—Ditto, ditto, with platinum spiral, complete. (Price only approximate as platinum varies in price)..... 120 00
- \*1870/2—Ditto, ditto, with palladium tube, filled with 2 grm. palladium, instead of platinum spiral..... 80 00
- \*1871—**Apparatus, for the analysis of gases**, according to Orsat; small size, without spiral..... 58 75
- \*1872—**Apparatus, for the analysis of gases**, especially designed for the analysis of **furnace gases**, according to **Orsat** and improved by **Muencke**. Complete in case..... 46 00



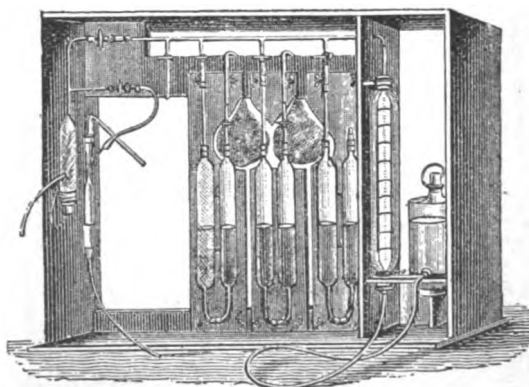
1870-1870/2



1872



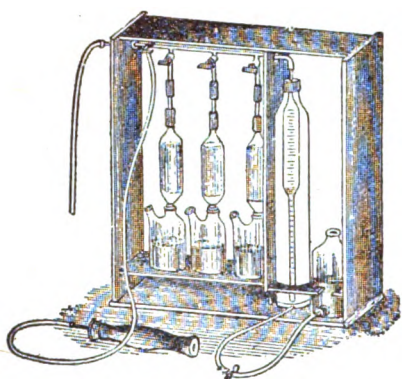
1873



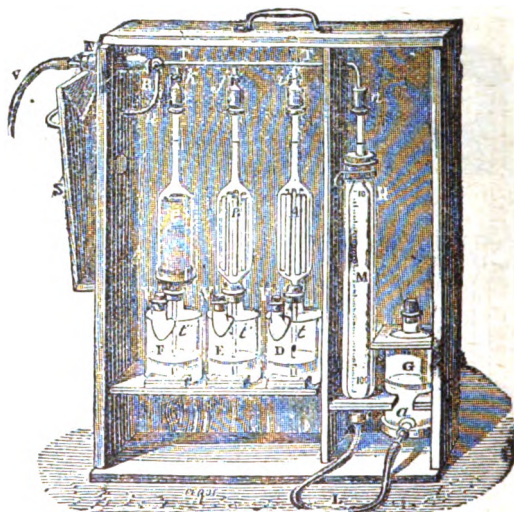
1871

- \*1873—**Apparatus, for the analysis of gases**, according to Dr. Muencke. Complete in case..... 31 00
- \*1874—Ditto, ditto, according to Fischer, much smaller than the foregoing. Complete in case. (Illustr. p. 48)..... 25 00
- \*1874/1—Ditto, ditto, according to Orsat-Fischer, with large universal stop-cock according to Petrzilka, complete in case. (Illustr. p. 48)..... \$45 00

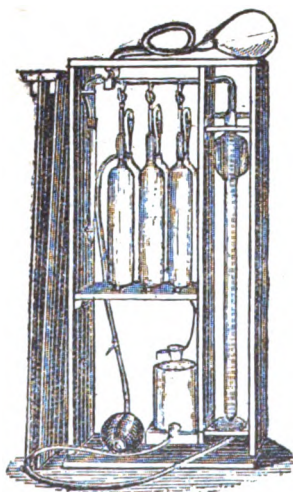
*I 1875—Apparatus, for the analysis of gases, according to Orsat, modified by Salleron.....	\$40 00
*I 1876—Ditto, ditto, according to Orsat, modified by Aron.....	40 00
*1880—Ditto, ditto, according to Dr. Arthur H. Elliot, designed for the analysis of furnace and illuminating gases; invaluable for gas works and iron companies.....	15 00
1881—Ditto, ditto, in case, for traveling, complete.....	30 00
*1881/1—Explosion burette for above, extra.....	9 50
*1882—Apparatus, for the analysis of furnace and illuminating gases; according to Elliot, modified by McIntosh. Without support. (Illustr. p. 49).....	22 50
1883—Ditto, ditto, Elliot's modified by Willard and Failyer. Without support.....	27 00



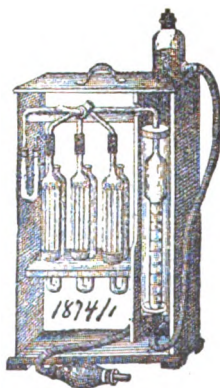
1876



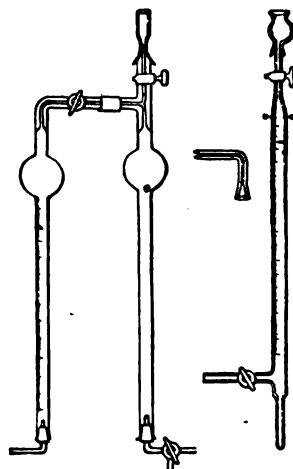
1875



1874



1874/1



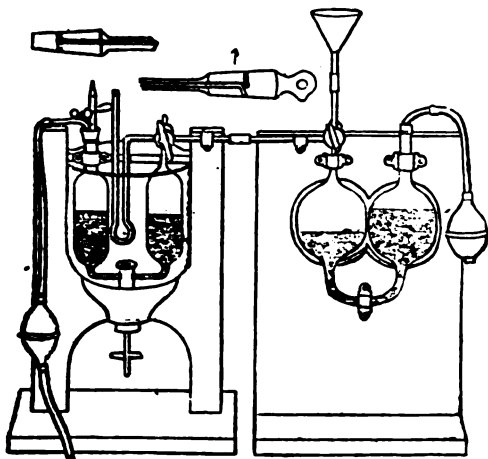
1880

1881/1

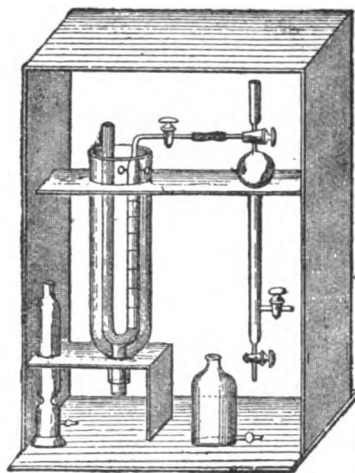
*1884—Apparatus, for the analysis of gases, according to Keiser (see Fresenius Zeitschrift fuer Analyt. Chemie, vol. 27, p. 374). (Ill. p 49)	34 50
*I 1885—Ditto, for gas analysis, according to Allen. Complete in wooden case. (Illustr. p. 49).....	22 50
*1886/3—Apparatus, Gas Volumeter, according to Lunge, for the analysis of Saltpetre, Nitrose, Dynamite, etc. (Illustr. p. 49).....	16 65

REMEMBER OUR DISCOUNT.

*1886/4 Apparatus, Gas Volumeter, according to Lunge, for the analysis of Pyrolusite, Chloride of Lime and substances not easily dissolved .....	\$12 75
*1885/5—Ditto, ditto, for the analysis of Saltpetre and other soluble salts.....	11 00
*1886/6—Ditto, ditto, for the determination of Nitrogen in organic elementary analysis. (Illustr. p. 50).....	13 30
*1886/7—Ditto, ditto, for the analysis of difficultly and readily soluble substances, such as Pyrolusite, Animal Charcoal, Chloride of Lime, Urine, Carbonates and Nitrates. (Illustr. p. 50) .....	13 30
*1886/8—Ditto, ditto. (Illustr. p. 50) .....	12 75

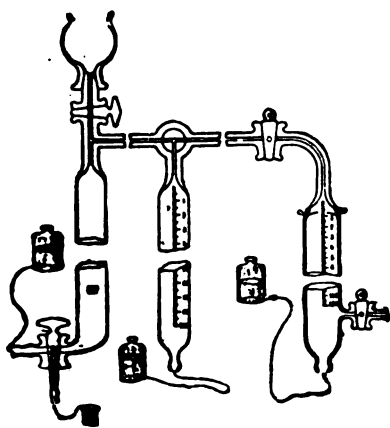


1884

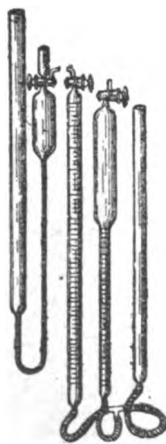


1885

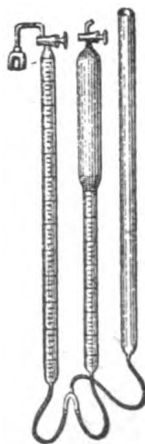
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=360 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



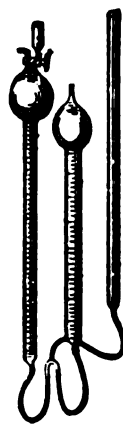
1882



1886/3



1886/4



1886/5

*I 1887—Apparatus, according to Thoerner, for the analysis of gases (Fischer's Zeitschrift fuer angewandte Chemie 1889.) Explosion Pipette. (Illustr. p. 50) .....	10 90
*I 1887/1—Ditto, Electrolytic Decomposition Apparatus for gas estimations. (Illustr. p. 50) .....	9 40
*I 1887/2—Ditto—Ignition or Combustion Pipette. (Illustr. p. 50).....	8 75

**\*I 1888—Apparatus, according to Thoenner, to collect and hold gas samples for analysis.**

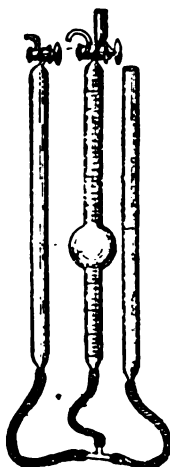
	150-250cc.	300-500cc.	1000cc.	1500cc.
Plain .....	\$3 50	5 50	6 00	6 50
Graduated .....	7 00	8 10	9 90	11 25



1886/6



1886/7



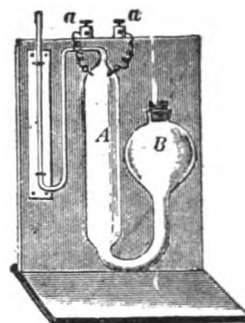
1886/8



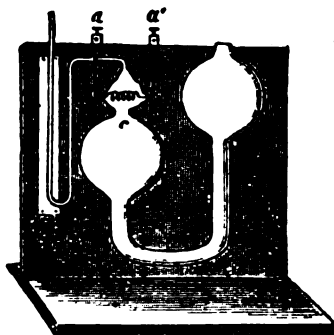
1888



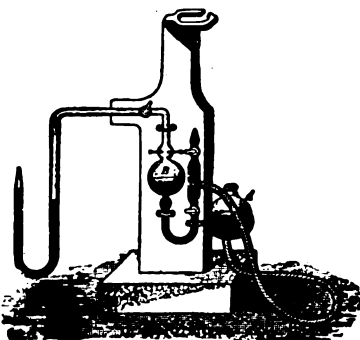
1890-a



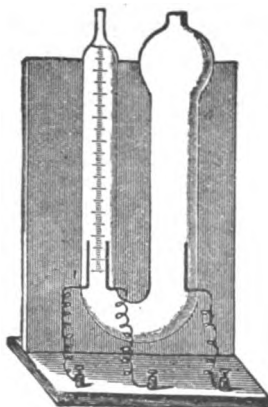
1887



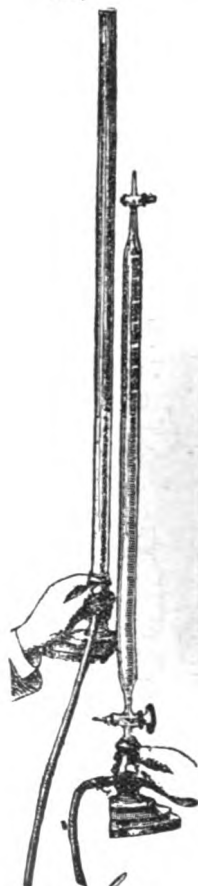
1887/2



1889



1887/1



1890-b

**\*1889—Apparatus, Gas Pipette, Salet's, for gas analysis, according to Bunsen's method of gasometric determination. (Fresenius Zeitschrift 1889, p. 464).....**

**\$11 15**

**REMEMBER OUR DISCOUNT.**

\*\*\*\*\*1890—Apparatus for the analysis of gases, according to Professor W. Hempel, the most perfect and most complete apparatus designed for exact and rapid determination as described in his "Neue Methoden fuer Analyse der Gase." Its great advantages are:

1. Only one sample volume of gas necessary to determine all gases it contains.
2. Any re-agent can be used with it.
3. No waste of chemicals.
4. No losses by absorption, etc.
5. Almost absolute accuracy and one-tenth the time formerly necessary.
6. Does not need refilling and cleaning after each test, it stays as it is, always ready for further test.

The apparatus includes 1 set gas burettes *a*; 1 set gas burettes *b*; 2 gas pipettes *d*, 2 compound pipettes *e*, 1 explosion pipette *f*, 1 gas pipette *f*, and palladium tube *g*. **without palladium.** All mounted on black walnut

**Gas Burettes** for Hempel's apparatus, set of two, in wooden bases, fig. a. (Illustr. p. 50) \$ 43 15

**Gas Burettes** for Hempel's apparatus, set of two, one of which having two glass stop-cocks, in wooden bases, fig. b. (Ill. p. 50) 6 25

**Gas Pipette, Hempel's, compound**, for absorption of gases, fig. c, mounted 9 35

**Gas Pipette, Hempel's**, for absorption of gases, fig. d, mounted 5 00

**Gas Pipette, Hempel's, explosion**, fig. e, mounted 3 65

**Gas Pipette, Hempel's**, for absorption of gases, fig. f, mounted. (Illustr. p. 52) 6 25

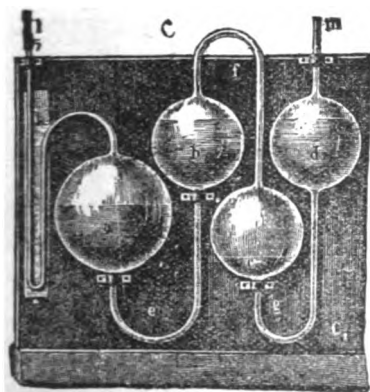
**Palladium Tube for hydrogen determination**, fig. g 3 30

**Palladium Tube**, filled with 1.4 Grammes Palladium, fig. g 8 70

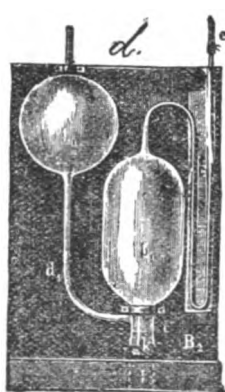
(It should be remembered that the price of a Palladium Tube, filled with Palladium, depends entirely upon the quantity of Palladium contained in it). **Cheaper filled Palladium Tubes furnished to order.**

**APPROXIMATE EQUIVALENTS:**

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.



1890-c



1890-d



1890-e



1890-g

1890/1—Apparatus, Hempel's, for the analysis of gases; same as No. 1890, but unmounted. Gas Pipettes as illustrated under No. 1890.

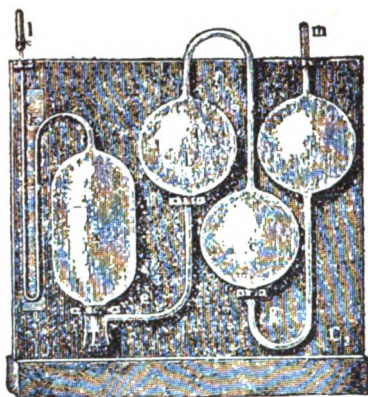
	c	d	e	f
Each	\$2 65	1 65	3 75	1 35



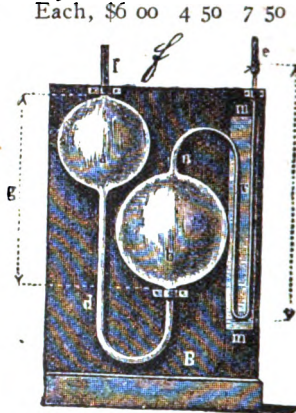
\* \* 1890/2—Apparatus, Hempel's, for the analysis of gases, same as No. 1890, but instead of wooden supports the Gas Pipettes are mounted on iron supports. (See fig. 1890/2-c e f.) Gas Pipettes, as illustrated under No. 1890.

Each, \$6 00 4 50 7 50 4 10

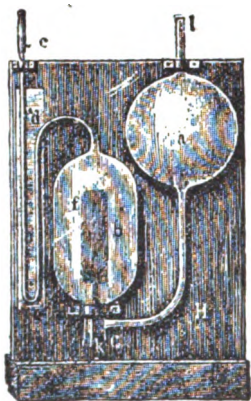
REMEMBER OUR DISCOUNT.



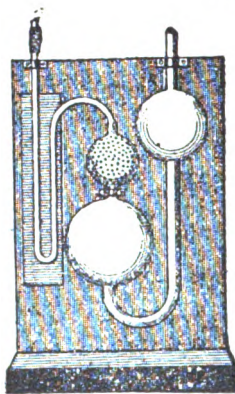
1891K



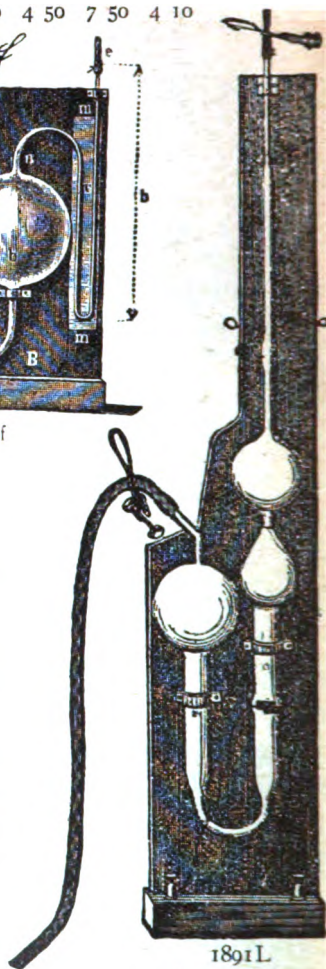
1890-f



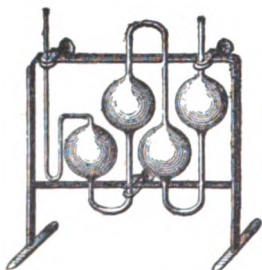
1891H



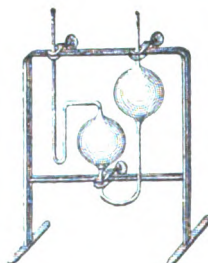
1891I



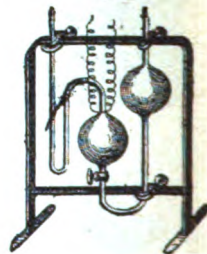
1891L



1890/2-c



1890/2-f



1890/2-e

\* \* \* 1891—Apparatus for the analysis of gases, according to Prof. W. Hempel.

Gas Pipette (Hydrogen Pipette fig. H, mounted.....	\$ 5 00
Gas Pipette, for absorption, filled with glass beads, fig. I, mounted.....	4 00
Gas Pipette, compound absorption, for solid re-agents, fig. K, mounted.....	5 00
Gas Pipette, explosion, new form, fig. L, mounted.....	8 00

1891/1—Apparatus, Hempel's, for the analysis of gases; same as No. 1891, but unmounted. Gas Pipettes as illustrated under No. 1891.

	H	I	K	L
Each	\$3 00	2 35	2 80	5 00

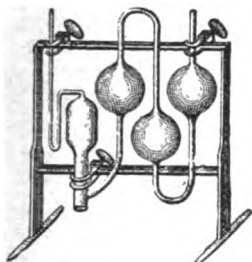
\*\*1891/2 Apparatus, Hempel's, for the analysis of gases; same as No. 1891, but instead of wooden supports, the Gas Pipettes are mounted on iron supports (See fig. 1891/2-K. & I.) Gas Pipettes as illustrated under No. 1891.

Each

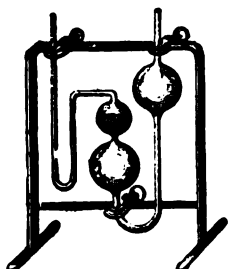
H  
\$6 00

I  
5 25

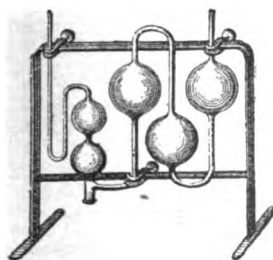
K  
6 00



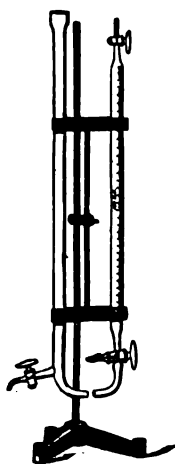
1891/2-K



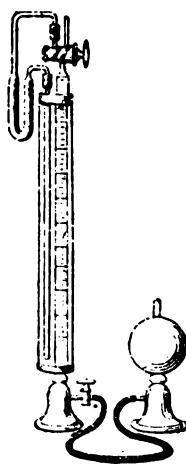
1891/2-I



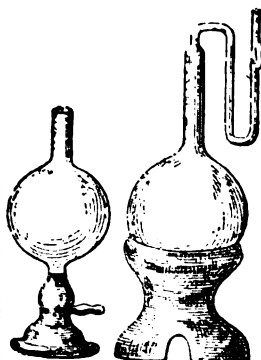
1897



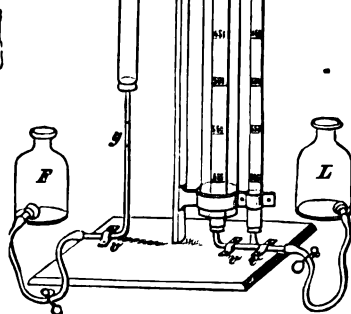
1901



1893



1896



1902



1894

\*1893—Apparatus for the analysis of gases, according to Prof. W. Hempel. Gas Burette with attachment for temperature and pressure correction.....

\$14 00

\*1894—Apparatus for the analysis of gases, according to Prof. W. Hempel. Gas Collecting Tube.....

3 75

\*1896—Apparatus for the analysis of gases, according to Prof. W. Hempel. Gas Holder, complete.....

5 30

\*1897—Apparatus for the analysis of gases, according to Prof. W. Hempel. Hydrogen Pipette, on iron support.....

5 25

1900—Apparatus for the analysis of gases. Winkler's, the glass parts.....

10 00

\*1901—Ditto, ditto, complete with support.....

13 50

\*I 1902 Apparatus for the estimation of water gas or generator gas, according to Fischer. Complete on support.....

31 25

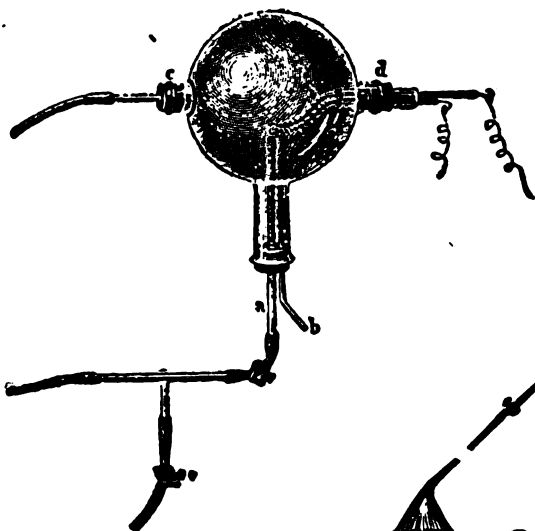
I 1902/1—Ditto, ditto, only the glass parts.....

22 35

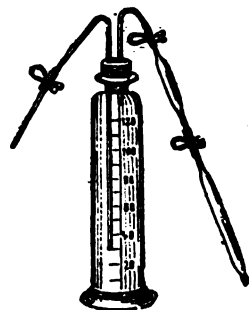
APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

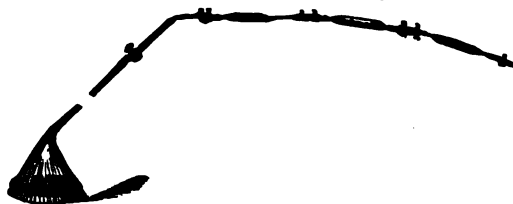
*1910—Apparatus for collecting and measuring gases, according to Bunsen. See "Bunsen's Gas Analyse," page 9, fig. 5 .....	\$ 4 40
*I 1920—Ditto, for collecting gases of mineral waters, etc., with 3 tubes, according to Bunsen.....	5 00
*1921—Apparatus for burning one gas in another by means of electric spark, as hydrogen in chlorine or oxygen, chlorine in hydrogen, illuminating gas or ammonia in oxygen, etc.....	11 25
*I 1922—Apparatus, Coquillion's Carburometer. Complete on support.....	28 65
*I 1923—Apparatus, Coquillion's Grisoumeter. Complete on support.....	24 00
*1925—Ditto, to illustrate the production of heat by the electric current; according to Forster. With support.....	30 00



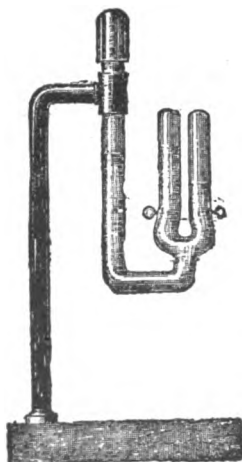
1921



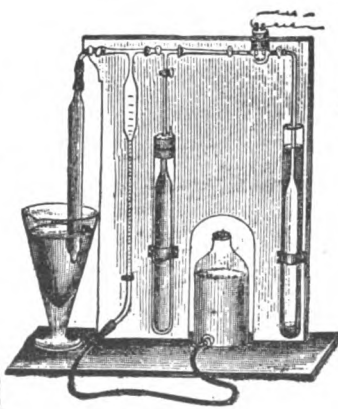
1910



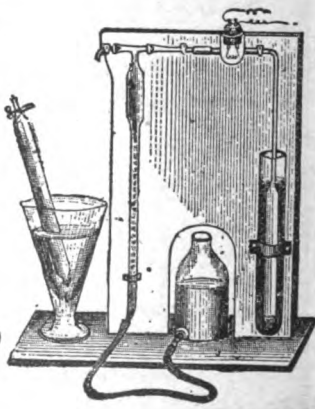
1920



1925



1922



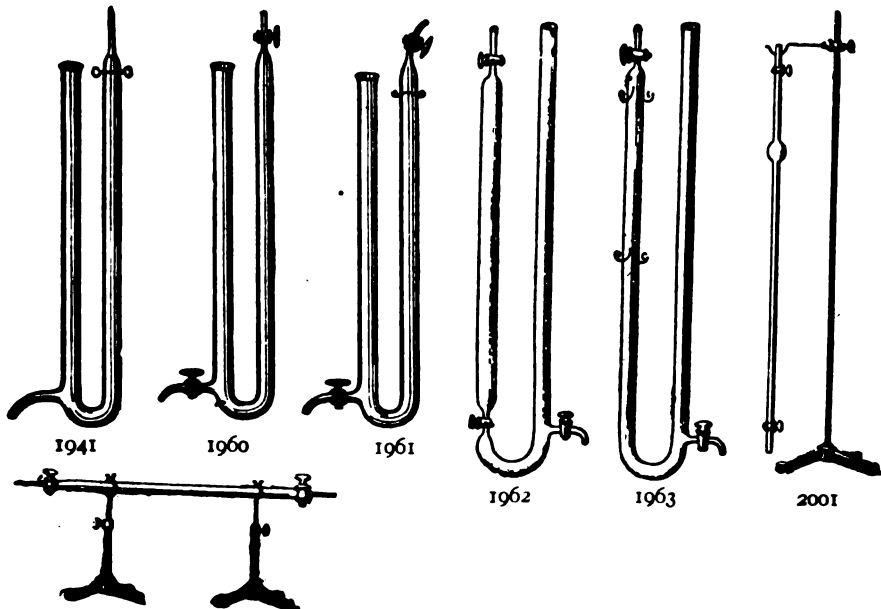
1923

*1930—Apparatus, Hoffman's, U tube; one limb sealed and one open, small tube sealed in below. (Illustr. p. 55) .....	2 50
1931—Ditto, ditto, with platinum electrodes .....	3 50
1940—Ditto, ditto, with inlet tube.....	2 60
*1941—Apparatus, Hoffman's, with inlet tube and platinum electrodes (Illustr. p. 55) .....	3 60
*1950—Ditto, ditto, with ground delivery stop-cock. (Illustr. p. 55) .....	3 25
1951—Ditto, ditto, with ground delivery stop-cock and platinum electrodes.....	4 20

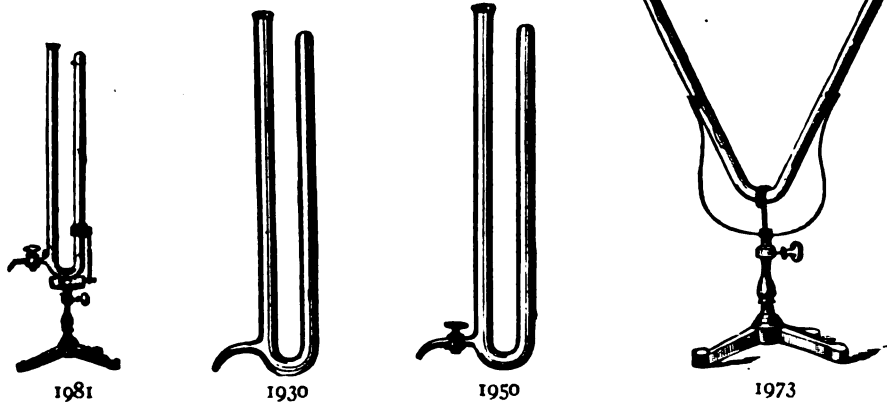
REMEMBER OUR DISCOUNT.



*1960—Apparatus, Hoffman's, with two stop-cocks.....	\$ 4 50
*1961—Ditto, ditto, with two stop-cocks and platinum electrodes .....	5 00
*1962—Ditto, ditto, to illustrate the proportions of volumes of the elementary gases, obtained by electrolytical decomposition of hydrochloric acid; without support .....	7 90
*1963—Ditto, ditto, to demonstrate the electrolysis and synthesis of water, without support .....	7 50
1972—Apparatus, Hoffman's, to illustrate the decomposition of hydrochloric acid in hydrogen and chlorine, of water in oxygen and hydrogen, and of ammonia in hydrogen and nitrogen. A V shaped tube with platinum electrodes, large .....	3 75
*1973—Ditto, ditto, large, mounted on very substantial elegant metal support .....	6 25



1991



1981

1930

1950

1973

1980—Apparatus, Hoffman's, for volumetric determination of H in H Cl .....	3 75
*1981—Ditto, ditto, mounted on support .....	6 25
1990—Ditto, ditto, for volumetric determination of hydrogen and chlorine in hydrochloric acid. The tube .....	3 45
*1991—Ditto, ditto, with supports .....	6 25
1992—Ditto, ditto, with cylinder and battery, complete .....	12 50
2000—Ditto, for showing that one vol. of H and one vol. of Cl. unite to 2 vol. of H Cl. without condensation. The tube .....	3 45
*2001—Ditto, ditto, mounted .....	5 95

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*2002—Apparatus, Hoffman's, for the same purpose as No. 2001, without support

\$ 3 45

2010—Ditto, for the decomposition of water, showing that water is composed of 1 vol. O and 2 vol. H

6 85

\*2011—Ditto, ditto, mounted

9 35

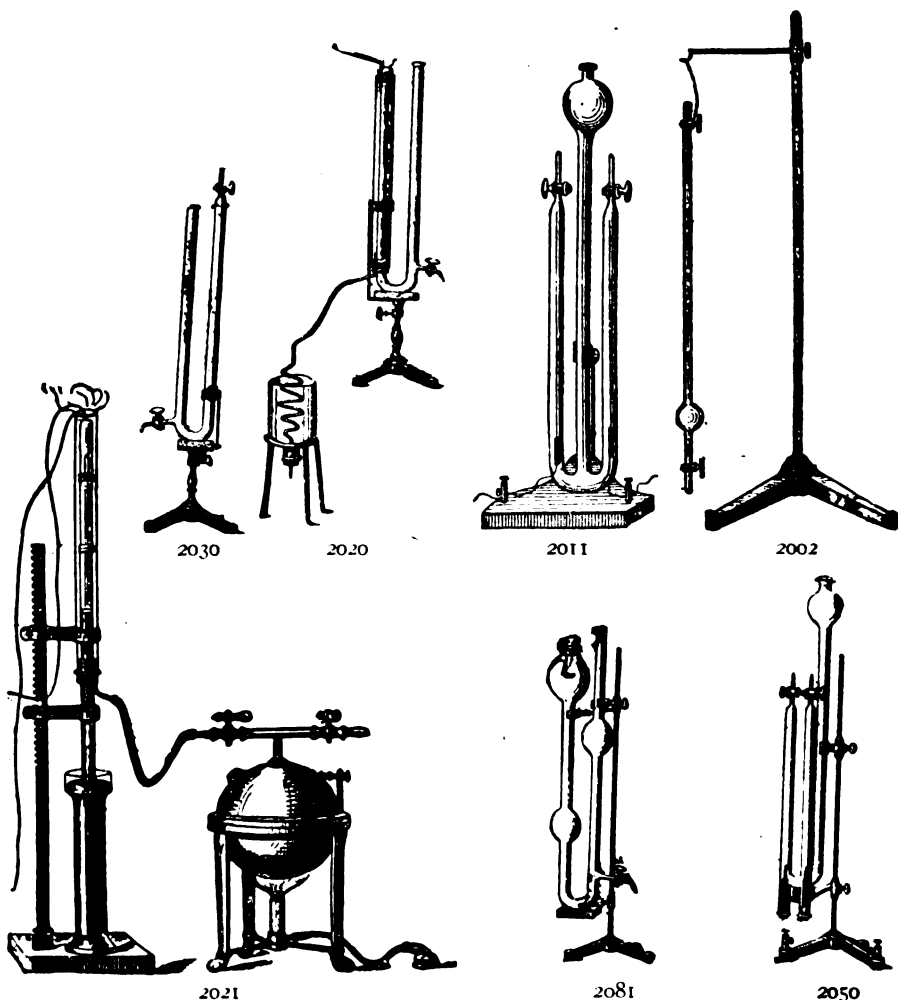
2012—Ditto, ditto, graduated

8 75

2013—Ditto, ditto, graduated and mounted

12 00

REMEMBER OUR DISCOUNT.



\*2020—Apparatus, Hoffman's, to demonstrate that in uniting H and O to water a condensation of  $\frac{1}{2}$  takes place. Tube with platinum electrodes, stop-cock, steam cylinder and glass worm, complete on support

12 50

\*2021—Ditto, to demonstrate, that 2 volumes of hydrogen and 1 volume of oxygen produce 2 volumes of water vapor, measured at 100° C. The tube with cylinder and support, but without the copper steam-boiler. Same with steam-boiler, gauge and burner

31 25

121 25

\*2030—Ditto, to demonstrate that 1 vol. N and 3 vol. H unite to 2 vol. ammonia, with support

7 50

2031—Ditto, ditto, without support

5 00

2040—Ditto, for volumetric analysis of ammonia by chlorine

3 75

\*2041—Ditto, ditto, with cylinder and support. (Illustr. p. 57)

7 80

\*2050—Apparatus, Hoffman's, for decomposition of H Cl., with carbon electrodes, with support

10 00

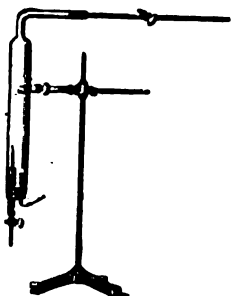
2051—Apparatus, Hoffman's, same as No. 2050, without support

6 85

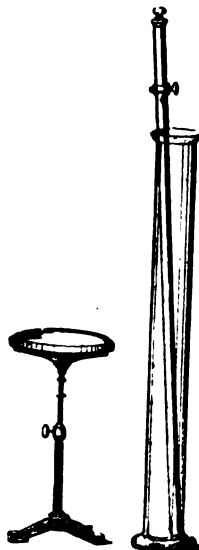
2060—Apparatus, Hoffman's; set of 3, one No. 2011 and two No. 2050, for the simultaneous decomposition of ammonia, water and hydrochloric acid; with supports .....	\$ 29 35
2061—Ditto, same set of 3 as the foregoing, without supports .....	20 55
2070—Ditto, for demonstrating the invariability of composition of H Cl .....	3 15
*2071—Ditto, ditto, with support .....	5 70
2075—Apparatus, Hoffman's, for volumetric analysis of hydrogen phosphide, with support .....	12 50
2080—Ditto, showing that in burning sulphur or carbon in oxygen, the volume of the resp. product is the same as that of the oxygen used. The tube .....	7 50
*2081—Ditto, ditto, on support. (Illustr. p. 56) .....	11 25
*2090—Ditto, to experiment with liquid sulphurous acid, with cylinder .....	6 85



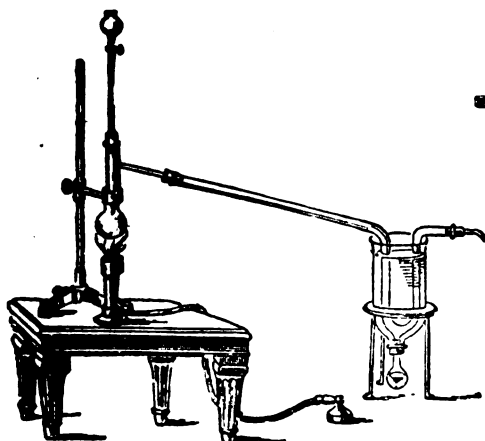
2071



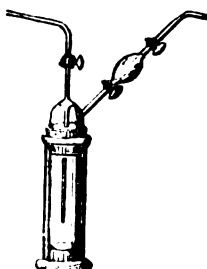
2101



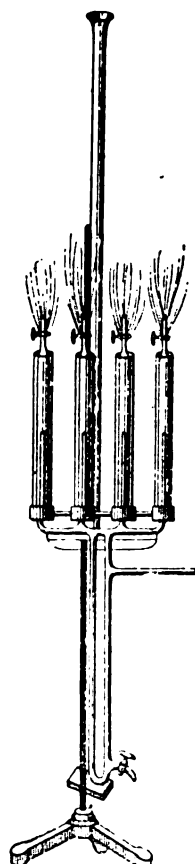
2041



2095/1



2090



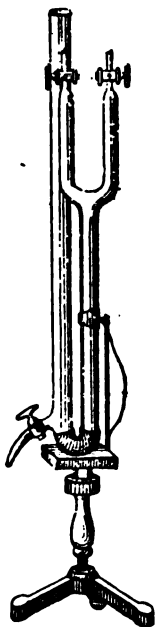
2096

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3000 cc.; 1 av. oz. = 28 gm.; 1 pound = 450 gm.

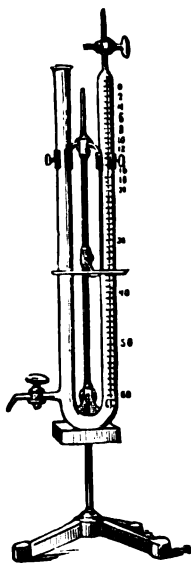
I 2095—Ditto, for the decomposition of <b>Nitric Acid</b> by the action of heat; the U Tube, Condenser, Clamp, Support and Funnel-tube with stop-cock, complete without table and without platinum flask .....	11 25
*I 2095/1—Ditto, ditto, with table and without platinum flask .....	15 00
Platinum Flask for above I 2095 and 2095/1 at lowest market price.	
*I 2096—Ditto, for showing pure and combined gases under the influence of temperature and pressure; with 5 stop-cocks. With support .....	35 00
Without support .....	20 00
2096/1—Same, with Steam Boiler No. 8641, and support .....	110 00
I 2097—Ditto, ditto, with 3 stop-cocks, without support .....	7 75
*I 2097/1—Ditto, ditto, with support. (Illustr. p. 58) .....	13 25
2100—Apparatus, Hoffman's, to demonstrate the phenomena of combustion of one gas in another one. The tube .....	6 25
*2101—Ditto, ditto, with support .....	9 00

2110—Apparatus for the decomposition of water, called <b>Prof. Hoffman's Lecture Apparatus</b> , with stop-cock near the bottom of one of the tubes; graduated .....	\$ 6 25
*2111—Ditto, ditto, on support .....	9 35
*2112—Ditto, for the determination of the density of vapor, <b>Hoffman's, complete</b> .....	89 00
*I 2113—Ditto, for the determination of the density of vapor, <b>Hoffman's, improved by Schiff</b> .....	28 00
*2114—Ditto, for the determination of the density of vapor, <b>Victor Meyer's</b> ; inner tube, \$1 25, outer tube, \$1 25. Both tubes .....	2 50
Small glass-stoppered vials for same, per dozen .....	1 50
2116—Ditto, ditto, according to W. la Coste, improved by Anschuetz, for determining the density of vapor of liquids of high boiling points under diminished pressure. Without manometer .....	22 50
*2116/1—Ditto, ditto, ditto, with manometers with milk-glass scale .....	37 50

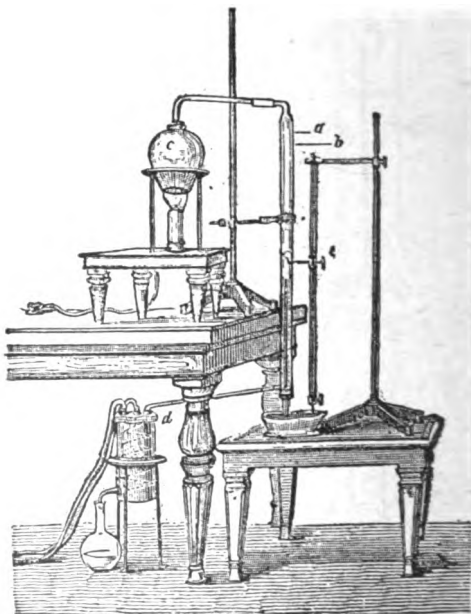
REMEMBER OUR DISCOUNT.



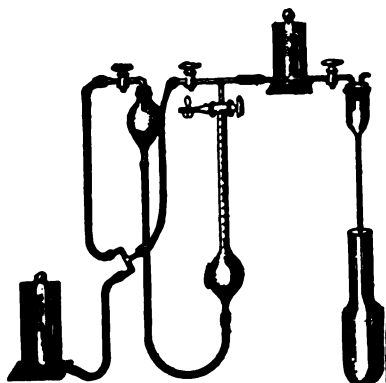
2097/1



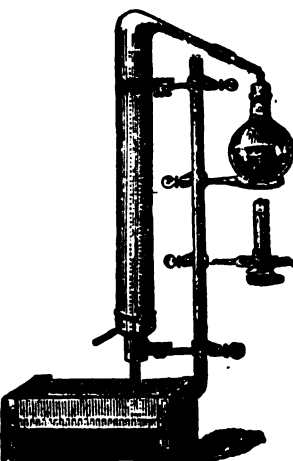
2111



2112



2116/1



2113



2114

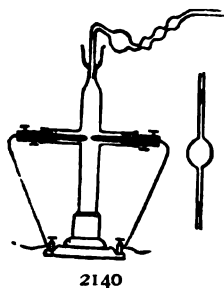


2120

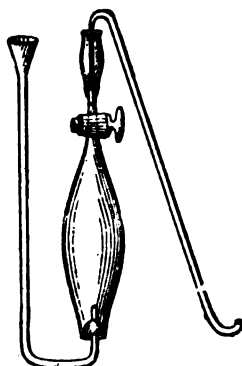
\*2120—Apparatus, **Hydrobromide**, for estimating urea, according to Huefner .....

3 75

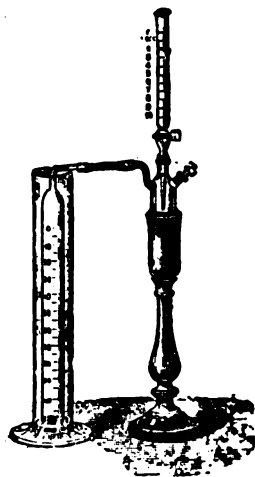
*2121—Apparatus, Hydrobromide, improved, Huefner's, with graduated Tube.....	\$ 6 25
*2122—Ditto, for transferring gases in urea estimation, according to Huefner.....	6 25
*2140—Ditto, for the decomposition of hydrochloric acid (leaving H and Cl., mixed) as detonating mixture. (See <i>Roscoe &amp; Schorlemmer's Treatise on Chemistry</i> , vol. 1, 1878, p. 125).....	6 25
Receiving tubes for same, each.....	31
*2150—Apparatus, according to Bunsen, for electrolytical generation of hydrogen.....	6 00
*2160—Ditto, ditto, for electrolytical generation of hydrogen and oxygen, leaving the gases mixed.....	6 00
Delivery Tube with 3 bulbs alone.....	0 75
*2161—Ditto, according to Ehrenberg, for the generation of hydrogen, oxygen and oxyhydrogen.....	18 00
*2162—Ditto, according to Thierry, for quantitative determination of hydrogen peroxide in solution; complete.....	11 25



2140



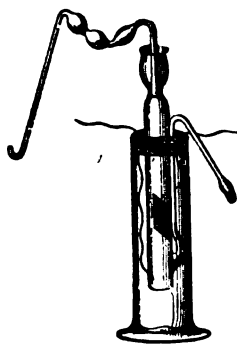
2122



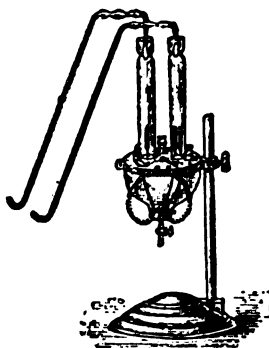
2162



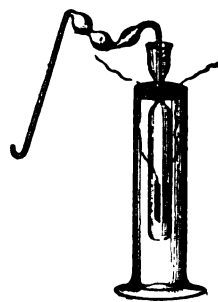
2121



2150



2161



2160

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*1 2163/1—Apparatus for the investigation of Micro-Organisms. Steam Sterilization Apparatus, according to Dr. R. Koch; linoleum covered, with stop-cock and gauge. (Illustr. p. 60.)  
 Diameter 20cm; height 50cm.  
 Cylinder of Steel Plate, lead lined.....\$18 50  
 Cylinder of Copper.....27 00  
 Thermometer for same, extra, \$2 50

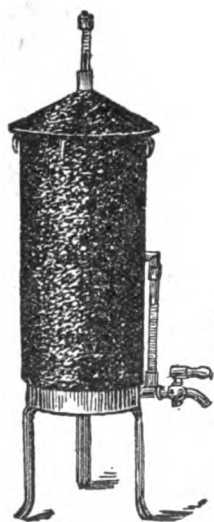
**DIRECTIONS:** Fill the apparatus with water to the point shown on the gauge. Having inserted the thermometer, put the helmet in place. Then apply heat, and **when the temperature has been raised to 100° C**, the material, to be sterilized, should be put in, using the hooks on the side as supports for the material, or placing the material in the inner vessel. The sterilization should last at least one hour, but it is preferably continued for several days.

\*I 2164/1—**Apparatus, Steam Sterilization Apparatus for Blood Serum, according to Dr. R. Koch;** linoleum covered, with stop-cock gauge and support for test-tubes.

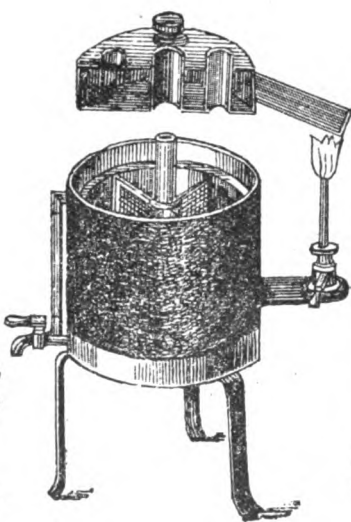
Cylinder of tinned Steel Plate, with copper bottom..... \$31 75

Cylinder of Copper ..... 45 75

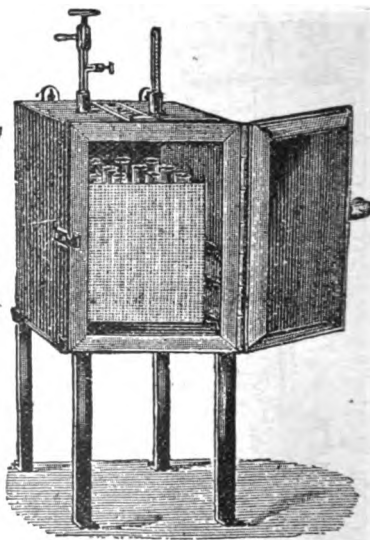
**DIRECTIONS:** Fill the cover and apparatus with water, taking care to keep the inner space absolutely dry. Raise the temperature by means of two burners to 60° C. The blood serum contained in the sterilization glasses, which have been sterilized in Apparatus No. 2165/1 is now placed in the hollow space of the apparatus, the helmet with thermometers put in position, the temperature of the inner hollow space raised as quickly as possible to 58° C. (it is, therefore, not advisable to use too many tubes at one time) and kept as near as possible at this degree. As the blood serum is to remain perfectly liquid, the temperature must not be raised above 60° C.



2163/1



2164/1



2165/1

REMEMBER OUR DISCOUNT.

\*I 2165/1—**Apparatus for the investigation of Micro-Organisms.**

**Double-Wall Sterilization Apparatus, according to Dr.**

**R. Koch,** for dry air sterilization at high temperatures. With 3 shelves, hooks to fasten against the wall and 4 legs for use on table.

Height	24	28	30	45	30cm.
Width	18	18	23	28	40cm.
Depth	16	22	20	28	22cm.
Steel Plate	\$16 00	17 50	24 00	31 00	31 00
Copper	\$27 50	30 50	43 00	58 50	58 50

**If covered with asbestos, an additional charge is made of**

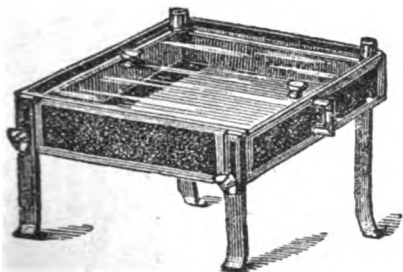
	\$6 50	6 50	7 00	8 50	8 50
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This apparatus is used for the sterilization of vessels, intended to receive the matter to be worked with, as the glasses for blood serum, Erlmeyer's flasks, glass plates for the nutritive gelatine, instruments, etc. The sterilization tubes are closed by stoppers of pure cotton and placed in the basket No. 2169; the frame is put into the apparatus and heated for an hour to 150° C, during which time the cotton will carbonize slightly. The glass plates for water investigations are placed into the iron box No. 2169/1, and heated as the foregoing. The Erlmeyer's flasks, closed with cotton stoppers, are placed in the apparatus and sterilized at 150° C.

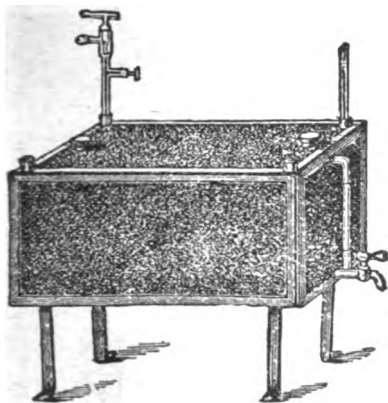
**\*I 2166/1—Apparatus for the investigation of Micro-Organisms. Apparatus for solidifying Blood Serum, according to Dr. R. Koch;** with glass cover, stop-cock and movable legs, covered with linoleum or asbestos, double walls.

For	50	100 tubes.
Tinned Steel Plate, with copper bottom.....	\$20 00	25 00
Copper .....	27 50	36 00

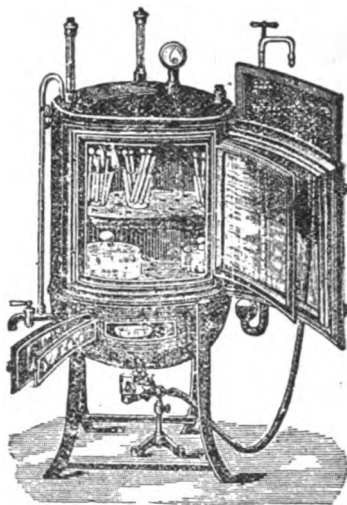
**DIRECTIONS:** The blood serum, sterilized in Apparatus No. 2164/1 is placed in this apparatus, laying the tubes in a slanting position, and heated to 65° to 75° C. As the blood serum must become a transparent solid, the temperature has to be kept up, the tubes being frequently examined, until this result is attained. The small quantity of water formed is allowed to remain, serving as a nutritive (Naehrboden).



2166/1



2166/4



2167/1

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*2166/2—Ditto, ditto. Apparatus for solidifying Serum.** It consists of a shallow case supported by two fixed and two adjustable legs for the inclination of tubes containing fluid serum, nutrient agar-agar, and similar substances. It is made of tin-lined copper, and covered with a non-conducting and water-proof material. Underneath the outside lid is a glass one; double walls, tubulations for thermometer and thermostat, water-gauge and stop-cock. Inside dimensions: length 40cm., width 20cm., depth 6.3cm. Complete with thermometer, thermo-regulator, burner and asbestos mat. (Illustr. p. 62)

**\$33 25**

**\*2166/4—Ditto, ditto, Vegetation Apparatus, according to Dr. R. Koch;** of lead lined metal, linoleum covered, with glass cover, water-gauge and stop-cock.

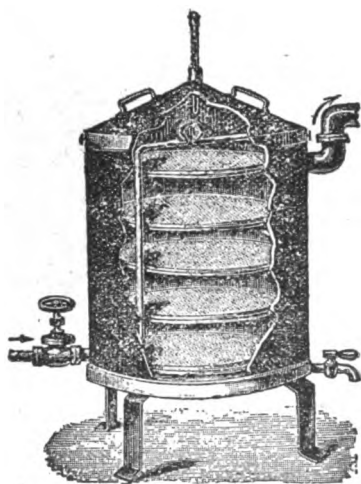
Length	20	25	25	50	75cm.
Width	20	25	40	25	25cm.
Height	20	25	25	25	25cm.
Each	\$22 50	25 00	28 50	33 00	47 50

**Perforated Stands, to form several divisions in chamber. Each, from \$2 00 to 3 50 extra.**

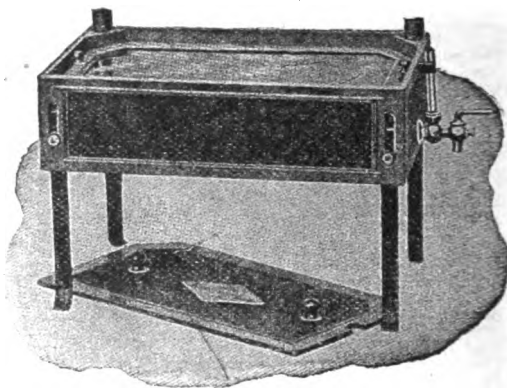
\*I 2167/1—**Apparatus for the investigation of Micro-Organisms. Vegetation Apparatus, according to Rohrbeck,** for constant low temperature, **oval form**, latest and most improved construction; of heavy copper, double walls; entirely covered with felt or asbestos as desired. Provided with water gauge, stop-cock and the necessary openings for thermometer, regulator, gauge, etc. (Illustr. p. 61.)

Inside Height	25	40	25	40	65cm.
“ Width	35	35	50	50	60cm.
“ Depth	25	25	25	25	30cm.
Each	\$157 50	187 50	206 25	240 00	337 50
If imported duty free	\$115 50	137 50	151 25	176 00	247 50

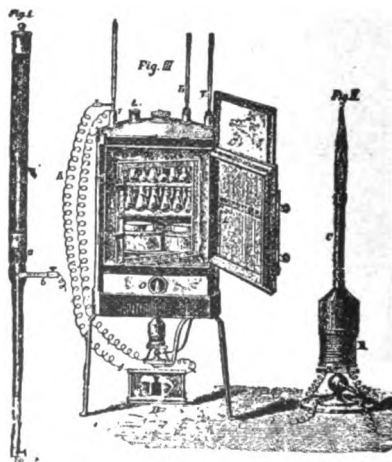
REMEMBER OUR DISCOUNT.



2168



2166/2



2168/1

\*I 2168—Ditto, ditto, **Steam Sterilization Apparatus, according to Dr. R. Koch, improved by Rohrbeck;** felt-covered. Provided with tubes, valves and flanges, for connecting with steam pipe. Height, 1 meter; diameter, 75cm. ....

\$195 00

**For Sterilizers, see also No. 8644, etc.**

\*I 2168/1—Ditto, ditto, **Culture Oven,** with new arrangement for keeping constant temperatures. The most perfect culture ovens made. Made of copper, finely finished.

38cm. high,	25cm. wide,	25cm. deep inside.....	\$200 00
40cm. high,	50cm. wide,	25cm. deep inside.....	240 00
66cm. high,	61cm. wide,	30cm. deep inside.....	346 65

**Electric Regulator for gas,** complete with electric thermometer, electro-magnet, and battery, in oak wood case, connecting wires, mercury regulator, etc. ....

60 00

**Koch's Safety Burner** for same, with support .....

13 35



**2168/2—Apparatus for the investigation of Micro-Organisms. Babe's Incubator;** with conical copper bottom, removable partition wall, by means of which 2 compartments, each 34cm. high, 25cm. wide and 25cm. deep, are formed. With 2 double doors of glass, the outer ones of iron, lead lined; coating of asbestos or felt, as desired. With tubulatures for thermometer and thermo-regulator, 2 perforated shelves, etc.

**Of Iron, lead lined.....** \$130 50

**Made entirely of copper.....** 255 00

**The apparatus, of iron, lead lined, if imported duty free.....** 95 70

**The apparatus, made entirely of copper, if imported duty free.....** 187 00

**\*2169—Ditto, ditto, Baskets of Tinned Wire for holding Sterilization Tubes.....** 0 80

**\*2169/1—Ditto, ditto, Sterilization Box for receiving Glass Plates, of iron, 14x50x18 cm. high.....** 2 00

**2169/2—Ditto, ditto, Gas Regulator (Reichert's Thermostat), see No. 5812.**

**2169/3—Ditto, ditto, Meat Press, see No. 7890.**

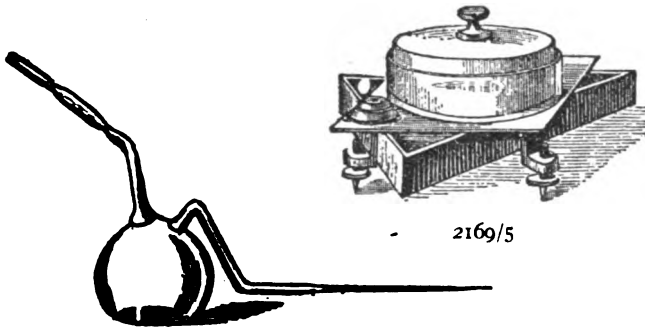
**2169/4—Ditto, ditto, Hot Water Funnel, see No. 5530.**

**\*2169/5—Ditto, ditto, Triangle, with brass leveling screws; without glass plate and bell glass and level,**

triangle of hardwood, \$6 85

metal, 10 00

For level see No. 6806.

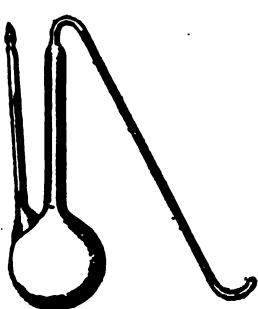


2169/5



2169/1

2169/11  
No. 6



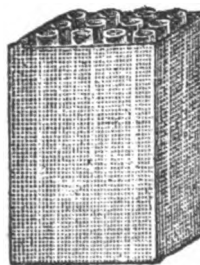
2169/10  
No. 5



2169/7  
No. 2



2169/6  
No. 1



2169



2169/9  
No. 4



2169/8  
No. 3

**\*2169/6—Ditto, ditto, Bacterioscopic Tubes No. 1.**

Each.....	100	200	500 cc.
	\$0 56	0 75	1 00

**\*2169/7—Ditto, ditto, Bacterioscopic Tube No. 2.**

0 94

**\*2169/8—Ditto, ditto, Bacterioscopic Flasks No. 3.**

Each.....	50	100 cc	
	\$0 45	0 55	

**\*2169/9—Ditto, ditto, Bacterioscopic Flasks No. 4.**

Each.....	125	250	500 cc.
	\$0 35	0 45	0 60

**\*2169/10—Ditto, ditto, Bacterioscopic Flasks No. 5.**

Each.....	125	250	500 cc.
	\$0 65	0 90	1 25

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

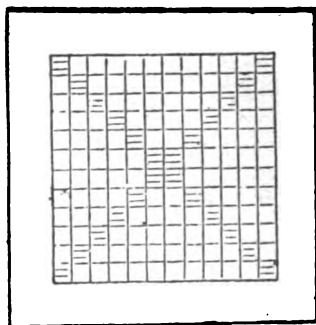
**\*2169/11—Apparatus for the investigation of Micro-Organisms. Bacterioscopic Flasks No. 6.** (Illustr. p. 63.)

	25	250	500 cc.
Each .....	\$0 55	0 75	1 00
*2169/12—Ditto, ditto, <b>Bacterioscopic Tube No. 7</b> .....			\$ 0 55
*2169/13—Ditto, ditto, <b>Bacterioscopic Flask No. 8</b> , for collecting bacteria, 150 cc. ....			2 65
*2169/14—Ditto, ditto, <b>Bacterioscopic Apparatus No. 9, Straus-Wurtz'</b> , for removing bacteria from air by its aspiration through water or gelatine. May be operated at any point and contents later made into roll-tube or plate cultures. ....			3 35
2169/15—Ditto, ditto, <b>Bacterioscopic Bellglasses, and Petri Dishes</b> , see Nos. 2087 and 2089. ....			
2169/16—Ditto, ditto, <b>Bacterioscopic Glass Plates</b> , to pour on (Culture Plates),			
130x85 mm. with plain edges, .....		with ground edges.	
Per dozen .....	\$0 75	1 00.	

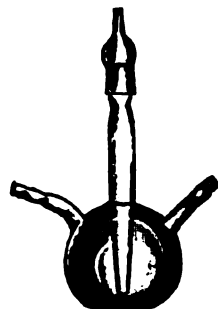
REMEMBER OUR DISCOUNT.



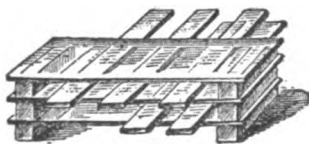
2169/24

2169/12  
No. 72169/14  
No. 9

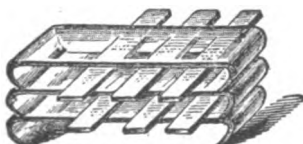
2169/17

2169/13  
No. 8

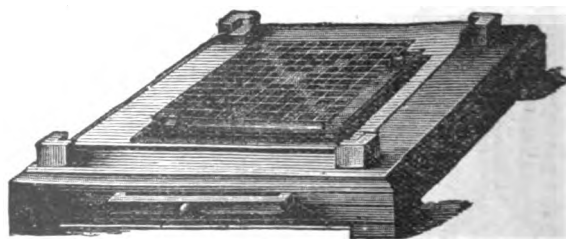
2169/21



2169/20—Fig. 1



2169/20—Fig. 2

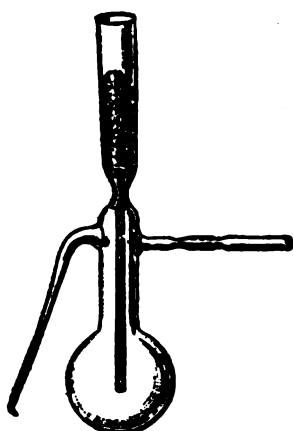


2169/18

**\*2169/17—Apparatus for the investigation of Micro-Organisms. Bacterioscopic Glass Plates**, for counting bacteriæ, divided in square cms.

12x12 cm. with subdivision of the diagonal squares each .....	2 00
*2169/18—Ditto, <b>Wolfhuegel's Counting Apparatus</b> , consisting of Counting Plate No. 2169/17 with polished wooden base containing drawer for accessories .....	6 25
2169/19—Ditto, ditto, <b>Bacterioscopic Slides</b> . See No. 8420, etc.	
**2169/20—Ditto, ditto, <b>Bacterioscopic Glass Benches</b> , to support the Slides with nutritive gelatine	
Per dozen .....	fig. 1. 3 35
	fig. 2. 3 75
*2169/21—Ditto, ditto, <b>Bacterioscopic Glass Blocks</b> , with cavity and glass plate. Each, 30cts; per dozen .....	3 00
*2169/22—Ditto, ditto, <b>Apparatus for the examination of Air for Micro-Organisms</b> , according to Dr. Hesse. (Illustr. p. 65.) .....	22 50

- 2169/23—Apparatus for the investigation of Micro-Organisms. Sterilization Glasses. See No. 9110, 9675 and 9676.
- \*I 2169/24—Ditto, ditto, Novy's Apparatus for Plate Cultures of Anaerobes, for gas or pyrogallate method. (Illustr. p. 64)..... \$ 5 00
- \*I 2169/25—Ditto, ditto. Same for gas, pyrogallate or vacuum method..... 6 85
- \*I 2169/26—Ditto, ditto, Novy's Apparatus for Tube Cultures of Anaerobes, by gas or pyrogallate method.
- |                         |            |             |
|-------------------------|------------|-------------|
|                         | 150x80 mm. | 200x100 mm. |
| With Stop-cocks .....   | \$6 00     | 6 40        |
| Without Stop-cocks..... | 2 70       | 3 10        |
- \*I 2169/27—Ditto, ditto, Muencke's germ proof Filtering Apparatus, for bacteria..... 3 75
- \*I 2169/28—Ditto, ditto, Pasteur's Filtering Apparatus, for bacteria..... 2 00



2169/28



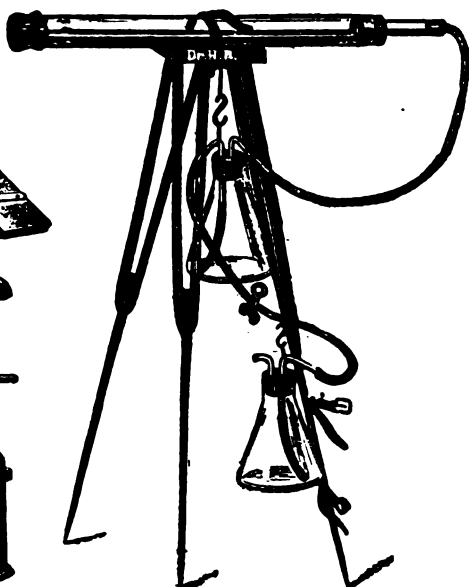
2169/32



2169/31

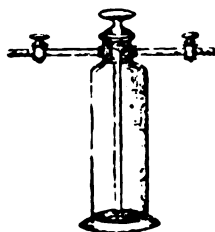


2169/25

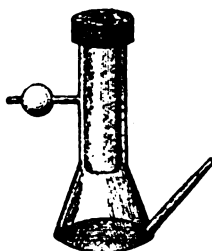


2169/22

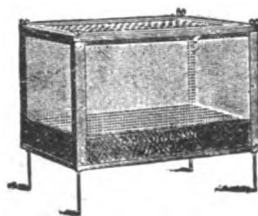
APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



2169/26



2169/27



2169/29

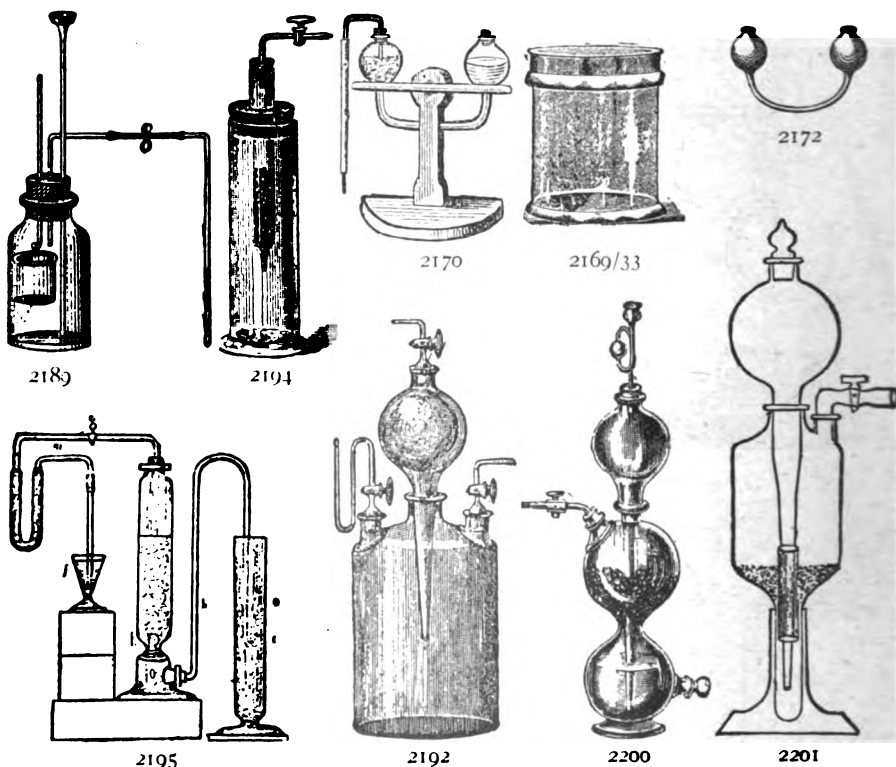


2169/30

- \*2169/29—Ditto, ditto, Vaughan's Cage..... 13 25
- \*2169/30—Ditto, ditto, Holder for Guinea Pigs, Voges', diameter 6 cm, length 18 cm, slot 10x2 cm..... \$1 33
- 8 cm, " 20 cm, " 10x2.5 cm..... 1 67
- \*2169/31—Ditto, ditto, Kitasato's Autopsic Holder for Mice..... 6 65
- \*2169/32—Ditto, ditto, Holder for Mice, Inoculating..... 2 00
- \*2169/33—Ditto, ditto, Mouse Jar, 15 cm. diameter, 20 cm. high. (Illustr. p. 66)..... 3 35
- \*2170—Apparatus, Babo's, for generating hydrogen sulphide, consisting of two bulbs, connected by a curved glass tube, on wooden support, with rubber stoppers, pinch-cock and delivery tube. (Illustr. p. 66)..... 3 75
- \*2172—The bent glass part alone. (Illustr. p. 66)..... 1 55

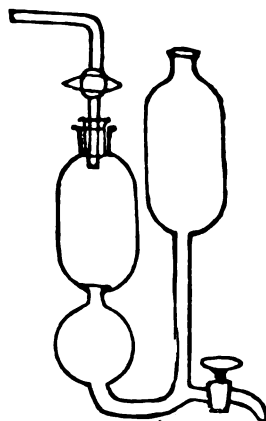
- 2180—**Apparatus**, Deville's, for generating hydrogen sulphide, hydrogen, etc., consisting of two tubulated lit. bottles, connected by rubber tube; with delivery tube, rubber connection and spring clamp..... \$ 3 75
- \*2189—**Apparatus**, Fresenius', for generating hydrogen sulphide and oxygen.
- |  |        |      |          |
|--|--------|------|----------|
|  | 500    | 1000 | 2000 cc. |
|  | \$1 85 | 2 50 | 3 10     |
- 2190—**Ditto**, **Fresenius'**, for generating hydrogen sulphide in large quantities, consisting of a tubulated bottle and a Wulf's bottle, connected by rubber tubing, a globe-shaped funnel, connected with Wulf's bottle by means of glass and rubber tubing; with safety tube, delivery tube and spring clamp.
- |  |        |        |       |
|--|--------|--------|-------|
|  | 4 lit. | 8 lit. | 12 00 |
|  | \$8 75 |        |       |
- 2191—**Ditto**, ditto, consisting of 2 A pirator Bottles No. 3370, fitted with four French Rubber Stoppers and connected by 6 mm. Rubber Tubing, 1½ meters long. One bottle provided with safety-tube, the other with glass stop-cock for delivery of hydrogen sulphide.
- |  |        |             |
|--|--------|-------------|
| Capacity of bottle for hydrogen sulphide, 4 lit. | 8 lit. | 20 lit.     |
| Capacity of bottle for acid..... 2 lit.          | 4 lit. | 8 lit.      |
| Each complete.....                               | \$8 00 | 11 00 18 75 |

REMEMBER OUR DISCOUNT.

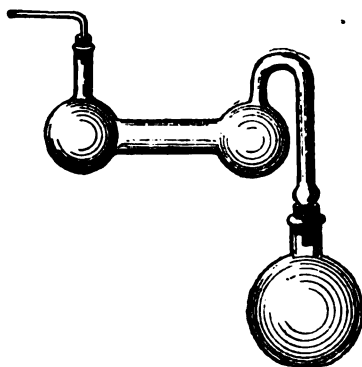


- \*2192—**Ditto**, according to Finkener, for generating hydrogen sulphide, carbonic acid, etc. .... 12 50
- \*2194—**Ditto**, ditto, according to Heumann or Kaehler.
- |               |            |           |          |
|---------------|------------|-----------|----------|
| Cylinder..... | 30x7.5 cm. | 35x10 cm. | 60x9 cm. |
| Each.....     | \$5 00     | 7 00      | 14 00    |
- \*2195—**Ditto**, for generating hydrogen sulphide. (*See Fresenius' Journal*, 1883, p. 554.) Complete ..... 5 65
- \*2200—**Ditto**, **Kipp's**, for generating hydrogen sulphide, with safety tube and Geissler's stop-cock; the best apparatus for a constant supply of  $H_2S$ . Complete.
- |                   |         |         |        |        |        |
|-------------------|---------|---------|--------|--------|--------|
| Capacity, 125 cc. | 250 cc. | 500 cc. | 1 lit. | 2 lit. | 4 lit. |
| \$4 10            | 4 60    | 5 25    | 6 45   | 8 40   | 14 00  |
- \*2201—**Ditto**, ditto, **Kipp's**, improved by Kavalier, of finest Bohemian glass ..... 13 35

- \*2202—Apparatus, for generating hydrogen sulphide, Chantemille's, for a continuous supply of gas. (*Fresen. Zeitschr.*, 1889, p. 335) ..... \$ 4 00
- \*2203—Apparatus, Hind's, for generating hydrogen sulphide. (*Journal Analyt. Chemistry*, May, 1895) ..... 10 00
- \*2210—Apparatus, Morton's, for generating hydrogen; approximate capacity, 24 lit. Complete, with wash-bottle, stop-cock and charge of zinc. 46 65



2203



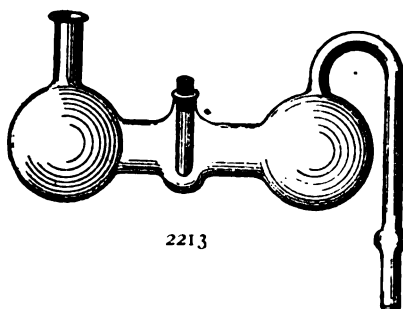
2212



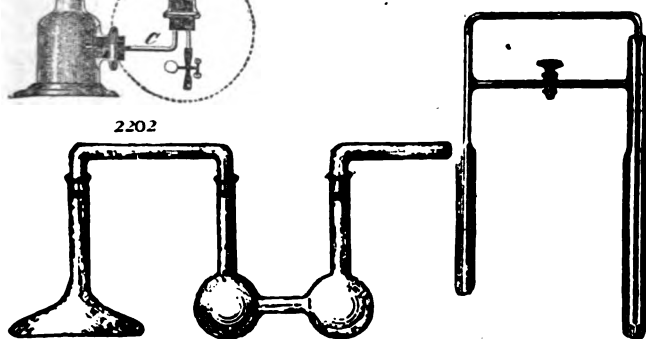
2210



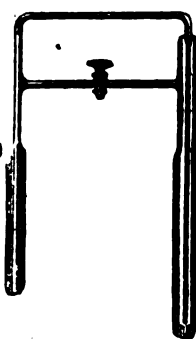
2202



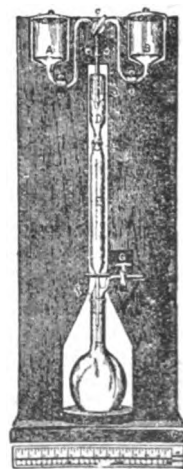
2213



2214



2211/1



2214/1

APPROXIMATE EQUIVALENTS:

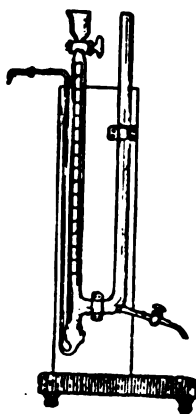
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*2211/1—Apparatus, for the condensation of ammonia and the demonstration of Carre's ice-machine ..... 3 50
- \*2212—Ditto, to illustrate the preparation of ice ..... 3 65
- \*2213—Ditto, ditto ..... 3 10
- \*2214—Ditto, ditto ..... 5 35
- \*2214/1—Apparatus, (Reductor), for the reduction of iron solutions by filtration through zinc; according to Clemens Jones ..... 22 50
- 2214/2—Ditto, ditto, simplified form, complete on stand ..... 13 00

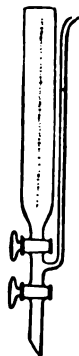
- \*2215—**Apparatus**, for the determination of melting points, according to Anschütz and Schultz; capacity about 150 cc. 250 cc 500 cc  
 Each ..... \$1 55 2 15 2 80
- \*2215/1—Ditto, ditto, according to Roth ..... \$ 3 10
- \*2216—Ditto, for the **determination of carbonic acid in illuminating gas**, according to Ruedorf; with 3 stop-cocks ..... 11 00
- \*2217—Ditto, for measuring the aspiration of moisture by plants, according to Moll ..... 8 00
- \*2218—Ditto, for the estimation of Methane, according to Winkler. (Fresenius Zeitschrift, 1889, p. 288) ..... 7 00



2222



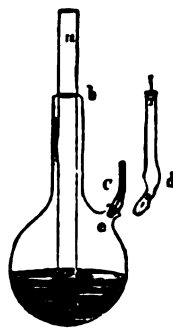
2221



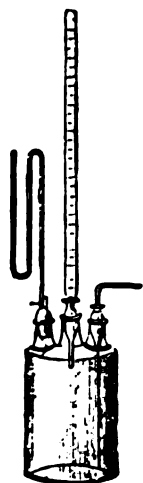
2220



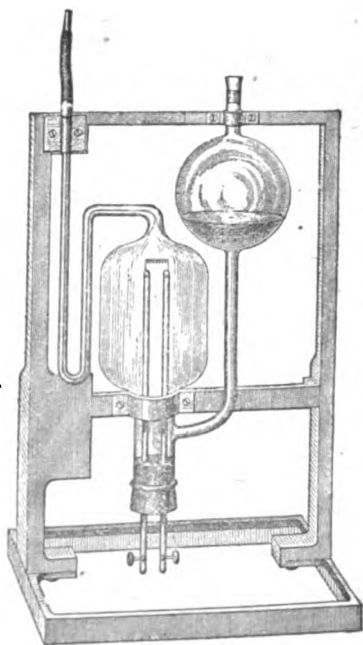
2215/1



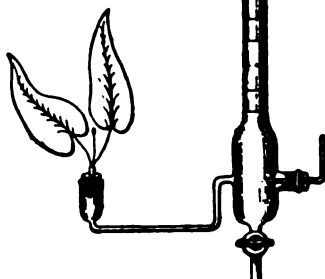
2215



2216



2218

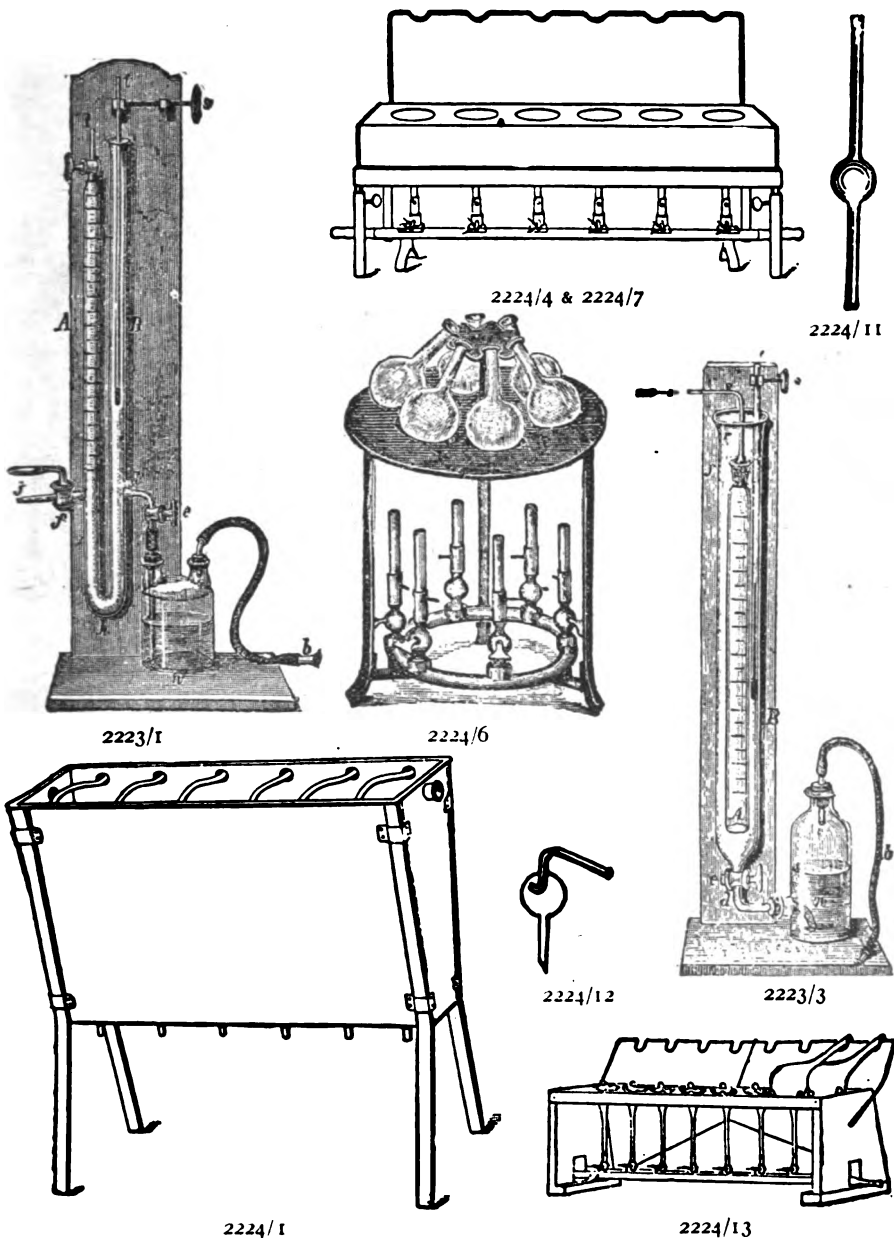


2217

- \*2220—**Apparatus**, after Toulet, for mineral analysis, with millimeter graduation and two stop-cocks ..... 9 30
- \*2221—**Apparatus**, for the determination of nitrogen, according to Schwartz, with support ..... 9 00
- \*2222—Ditto, ditto, according to Tennant, graduated to 100 cc ..... 5 25
- 2223—Ditto, ditto, according to Zulkowsky-Gawalowsky (see Fresenius Zeitschrift fuer Analyt. Chemie, Vol. 24, p. 61) ..... 10 00

REMEMBER OUR DISCOUNT.

*2223/1—Apparatus, for the determination of nitrogen, according to Zul-	
kowsky-Gawalowsky, on board .....	\$16 20
2223/2—Ditto, ditto, according to Ludwig .....	8 50
*2223/3—Ditto, ditto, ditto, on board .....	15 50



## APPROXIMATE EQUIVALENTS:

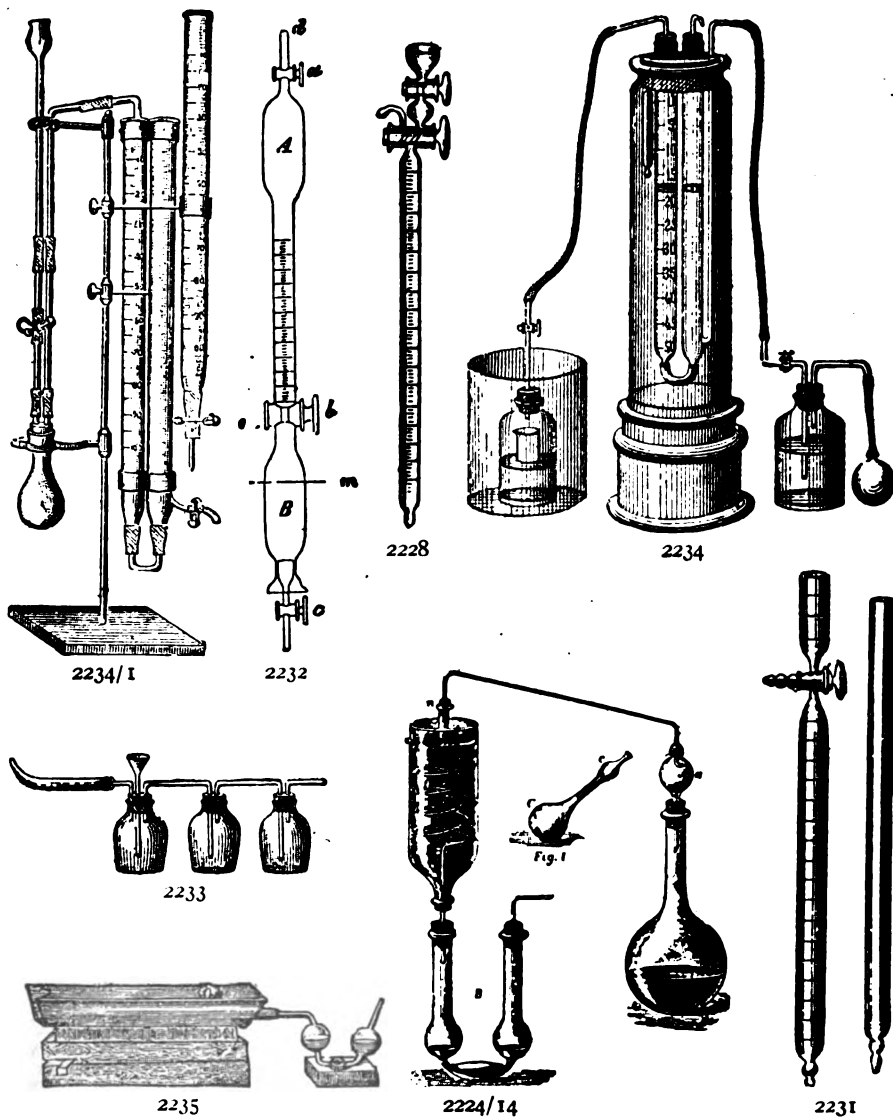
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

2224—Apparatus, Kjeldahl's, for nitrogen determination, as used by laboratories of Agricultural Experiment Stations, Fertilizer Works, etc.:

*2224/1—Kjeldahl's Condenser, copper, tin lined, 6 coils of pure block tin	33 30
2224/2—Kjeldahl's Condenser, copper, tin lined, 10 coils of pure block tin	60 00
2224/3—Kjeldahl's Condenser, zinc, 6 coils of pure block tin .....	26 65
*2224/4—Kjeldahl's Digesting Shelf, with 6 burners .....	21 35

2224/5—Kjeldahl's Digesting Shelf, with 10 burners .....	\$26 65
*2224/6—Kjeldahl's Digesting Shelf, round form, 6 burners. (Illustr. p. 69) .....	21 35
*2224/7—Kjeldahl's Distilling Shelf, with 6 burners. (Illustr. p. 69) .....	21 35
2224/8—Kjeldahl's Distilling Shelf, with 10 burners .....	26 65
2224/9—Kjeldahl's Digesting Flasks, (see No. 5304).	
2224/10—Kjeldahl's Distilling Flasks, (see Nos. 5250, 5250/1 and 5251).	
*2224/11—Kjeldahl's Connecting Bulb Tubes, (Illustr. p. 69); each .....	31
*2224/12—Ditto, another form (Illustr. p. 69); each .....	62

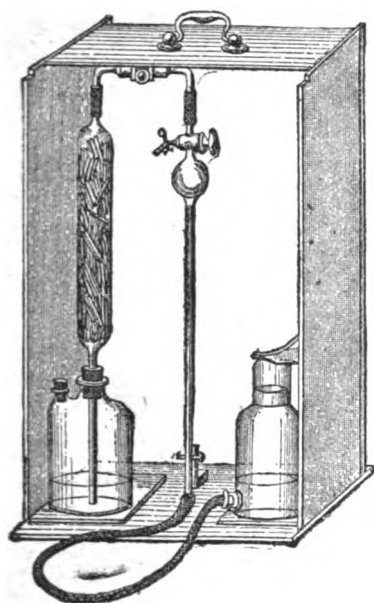
REMEMBER OUR DISCOUNT.



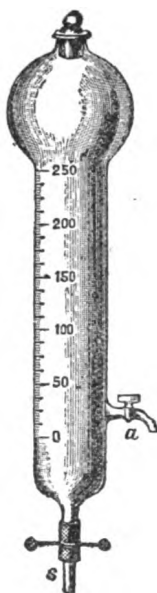
*2224/13—Kjeldahl's Iron Stand to support Erlenmeyer flasks, $\frac{3}{4}$ liter capacity. (Illustr. p. 69.)	
For 6 flasks, with 6 Bunsen burners with air regulation .....	13 25
For 10 flasks, with 10 Bunsen burners with air regulation .....	21 25
*2224/14—Kjeldahl's Distilling Apparatus, according to Arnold, for ammonia distillation; the glass parts only. (See Zeitschrift für angew. Chemie 1887, p. 4) .....	7 20
2226—Apparatus, for estimating nitrogen in saltpetre, Foerster's; with 5 bulbs. (Fresenius Zeitschrift 1879, p. 426.) Capacity 250 cc .....	1 80



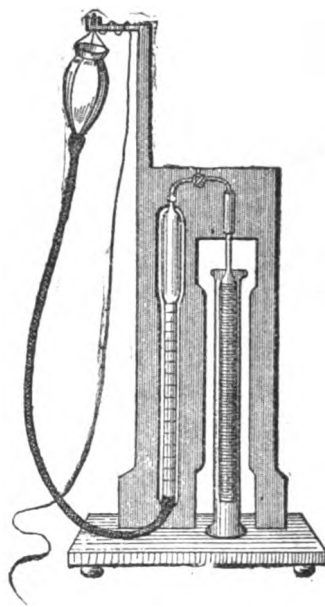
\*2228—Apparatus, according to **Horn**, for determining the quantity of Nitrogen in gunpowder; with companion tube. (Illustr. p. 70)..... \$10 30



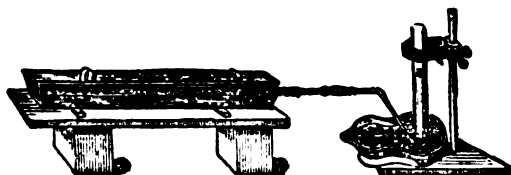
2242



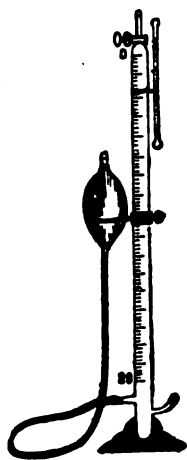
2240/3



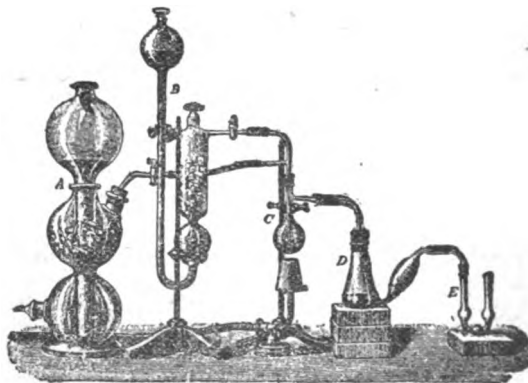
2243



2236



2240



2245

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

\*1 2231—Apparatus for the determination of Nitrogen, according to Allen. (Illustr. p. 70) .....

4 00

1 2231/1—Ditto, ditto, with support .....

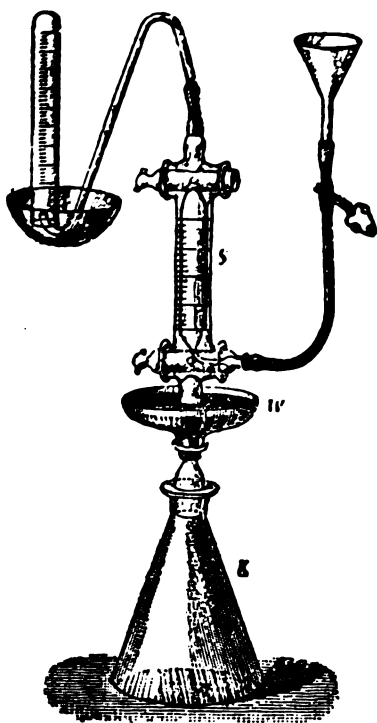
7 10

\*2232—Ditto, according to Franke, for the determination of Nitrogen. (Illustr. p. 70) .....

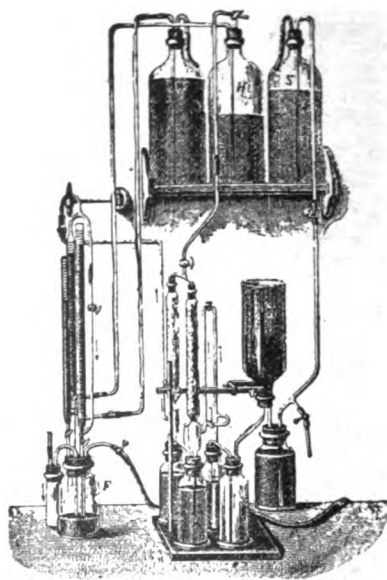
12 50

- \*2233—**Apparatus, Noellner's, for the determination of Nitrogen.** (Illustr. p. 70) \$ 1 85
- \*I 2234—**Apparatus, for the determination of Nitrogen, according to Knopp, modified by Wagner.** (Illustr. p. 70) 25 00
- \*2234/1—**Apparatus, for the determination of Nitrogen, according to Knopp; complete with support.** (Illustr. p. 70) 19 00
- \*2235—**Apparatus, for the determination of Nitrogen in organic analysis, according to Will & Varrentrap. A combustion furnace with combustion tube of infusible Bohemian glass and Nitrogen Bulb.** (Illustr. p. 70.)
- |                              |        |        |
|------------------------------|--------|--------|
| Furnace .....                | 45 cm. | 60 cm. |
| Apparatus as described ..... | \$4 15 | 5 00   |

REMEMBER OUR DISCOUNT.



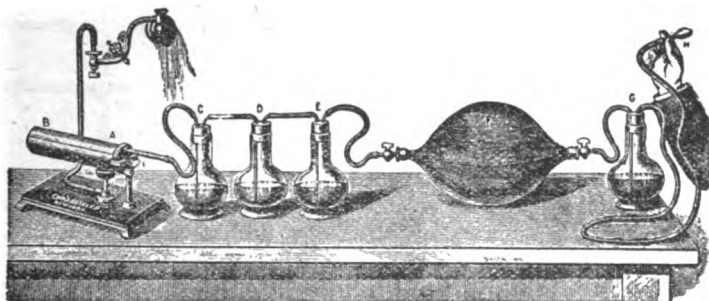
2244



2246

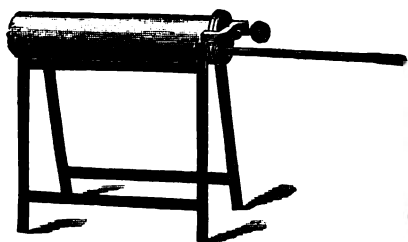
- \*2236—Ditto, ditto, according to Dumas. A combustion furnace, combustion tube of infusible Bohemian glass and delivery tube, porcelain pneumatic trough, graduated eudiometer with wooden support. (Illustr. p. 71.)
- |                              |        |        |
|------------------------------|--------|--------|
| Furnace .....                | 45 cm. | 60 cm. |
| Apparatus as described ..... | \$9 35 | 12 00  |
- 2237—Ditto, according to **Johnston (Azotometer)**. See Nos. 2490 and 2491.
- 2238—Ditto, according to **Lunge (Azotometer)**. See Nos. 2500 and 2501.
- 2239—Ditto, according to **Levison (Azotometer)**. See Nos. 2510 and 2511.
- \*2240—**Apparatus, Schiff's, for the determination of Nitrogen, with thermometer and reservoir.** (Illustr. p. 71) 6 50
- 2240/1—Ditto, ditto, with reservoir, but without thermometer 5 60
- 2240/2—Ditto, ditto, without reservoir and without thermometer 4 35
- \*I 2240/3—**Apparatus, Oil Burette, Koninck's, for the analysis of fat oils.** (Fischer's Zeitschrift 1889, p. 261). (Illustr. p. 71) 6 25
- \*I 2242—**Apparatus, according to Lindemann-Winkler, for volumetric estimation of oxygen, complete in case.** (Illustr. p. 71) 23 40
- I 2242/1—Ditto, ditto, the glass parts alone 14 00
- \*I 2243—**Apparatus, for volumetric estimation of oxygen, on wooden support.** (Illustr. p. 71) 18 75
- 2243/1—Ditto, ditto, the glass parts alone 10 00
- \*2244—Ditto, for measuring the quantity of oxygen, generated from fresh plants, according to Weyl 18 75

- \*2245—**Apparatus**, for estimating oxygen in peroxides, by aid of gaseous H. Cl., according to Koninck, (see Fischer's Zeitschrift fuer angewandte Chemie 1888, p. 353), (Illustr. p. 71); complete..... \$30 00
- 2245/1—Ditto, ditto, the glass parts alone..... 23 50
- \*2246—**Apparatus**, for estimating the quantity of oxygen dissolved in water, according to Roscoe & Lunt. (Fischer's Zeitschrift 1889, p. 615.) (Illustr. p. 72)..... 32 00
- 2248—**Apparatus for generating "Laughing Gas" and for washing same**, as used in the so-called "Compound Oxygen Treatment," consisting of
- |  |        |       |
|--|--------|-------|
| 1 Bohemian Flask, 2 lit.....   | \$0 55 |       |
| 1 French Rubber Stopper for same, with 13 mm. hole, No. 9.....         | 0 45   |       |
| 3 Wash bottles, 4 lit., especially made for that purpose..             | 1 95   |       |
| 3 French Rubber Stoppers, with two 13 mm. holes, for same, No. 11..... | 2 20   |       |
| 6 bent Glass-tubes, 13 mm. diameter, for wash bottles....              | 2 00   |       |
| 1 bent Glass-tube, 13 mm. diameter, for flask.....                     | 40     |       |
| 365 cm. stout White Rubber Tubing, for connections.....                | 3 70   |       |
| 1 Glass Mouthpiece, especially made for that purpose....               | 35     |       |
| 1 Rubber Gas-bag, 40 liters, with brass socket and stop-cock.....      | 9 00   | 20 60 |
| <b>Packed, ready for shipment</b> .....                                |        | 21 80 |
- 2249—**Apparatus for generating Oxygen and for washing same**, as used in the so-called "Compound Oxygen Treatment," consisting of
- |  |        |       |
|--|--------|-------|
| 1 Copper Retort, 1 lit.....  | \$3 75 |       |
| 3 Wash bottles, 4 lit., especially made for that purpose               | 1 95   |       |
| 3 French Rubber Stoppers, with two 13 mm. holes, for same, No. 11..... | 2 20   |       |
| 6 bent Glass-tubes, 13 mm. diameter, for wash bottles                  | 2 00   |       |
| 365 cm. stout White Rubber Tubing, for connections....                 | 3 70   |       |
| 1 Glass Mouthpiece, especially made for that purpose                   | 35     |       |
| 1 Rubber Gas-bag, 40 liters, with brass socket and stop-cock.....      | 9 00   | 22 95 |
| <b>Packed, ready for shipment</b> .....                                |        | 24 20 |



**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



2250 &amp; 2251

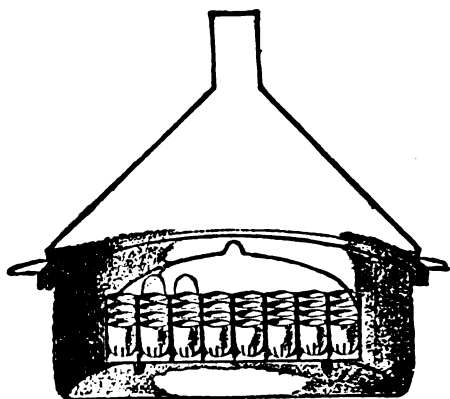
2265



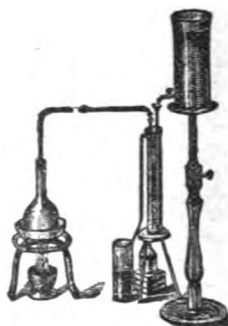
2260

- \*2250—Ditto, for generating oxygen, of copper, latest and most improved pattern. **A strong copper drum**, 1 liter capacity, with delivery tube, including support..... 9 00
- \*2251—Ditto, ditto, made of iron, including support..... 6 00
- \*2260—Ditto, for generating oxygen, by Prof. S. A. Lattimore, of Rochester, N. Y., made of sheet copper, including 100 lit. gas-bag, tripod stand, lamp and wash bottle..... 26 65

- \*2265—**Apparatus for generating and inhaling oxygen**, consisting of a Russia sheet-iron retort, 5x30 cm., mounted on a nicely finished iron base, four one-liter wash-bottles with rubber stoppers and glass-tubes, a double-necked 15 lit. gas-bag with nickel-plated stop-cocks, 270 cm. 8 mm. rubber tubing, two glass mouthpieces, and a retort-cleaner. (Illustr. p. 73.) Complete with gas-burner ..... \$ 37 50



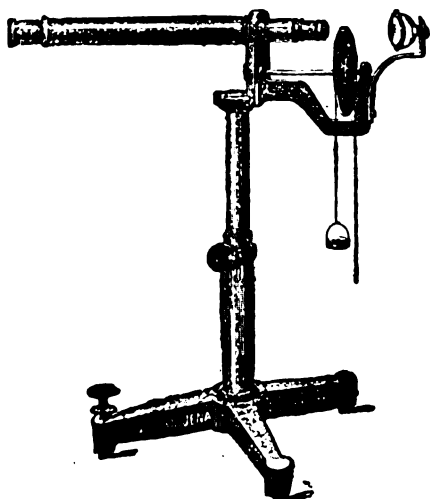
2270



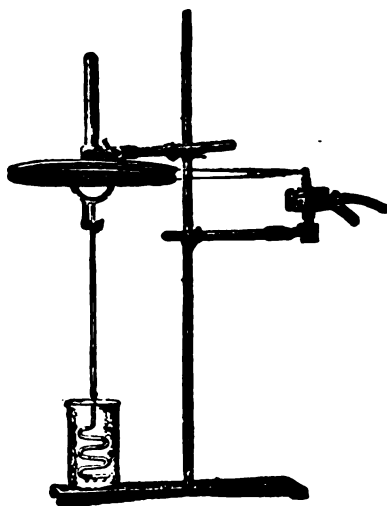
2281



2282



2288

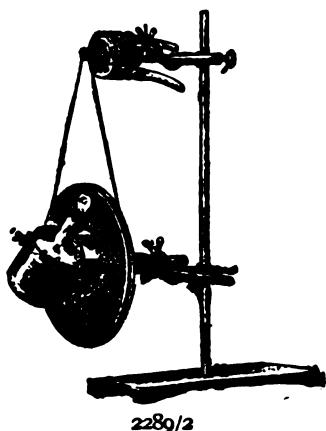


2289

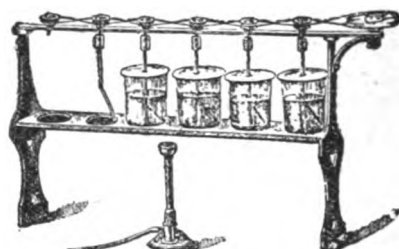
REMEMBER OUR DISCOUNT.

- \*2270 Ditto, **Parting and Assaying, of Platinum**, as used in the U. S. Mints, with 20 to 32 cornet cups. Approximate weight 350 to 600 grammes. **At lowest market price.**
- \*2271 Apparatus, according to Mitscherlich, for the determination of phosphorus; the glass parts alone ..... 10 00
- \*2272 Ditto, ditto, complete with support ..... 14 00
- \*2273 Apparatus, for the determination of phosphorus, according to Goetz. (Fischer's Zeitschrift 1889, p. 638) Each 94cts, per dozen ..... 11 00
- \*2274 Ditto, ditto, stoppered; each ..... 1 50
- \*2275 Apparatus, of glass, for pneumato-hydrostatic illustrations; with 3 Geissler's stop-cocks. See Catalogue of Physical Apparatus.
- \*2276 Apparatus for measuring the growth of plants, according to Haeckel, improved by Zeiss. Movements of the disc can be read to 1/10 mm. and estimated to 1/100 mm ..... 142 50
- \*2277 Apparatus for stirring, Rabe's, complete, with turbine ..... 20 00
- \*2278 Ditto, the turbine alone ..... 9 35

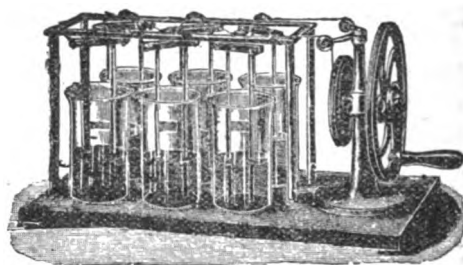
- \*2289/2—Apparatus, for shaking, complete with turbine ..... \$21 25  
 2289/3—Ditto, for stirring and shaking, Rabe's, with turbine (see fig. 2289) the stirring arrangement being interchangeable with the shaking arrangement of fig. 2289/2. Complete..... 31 90  
 \*2290/1—Apparatus, for stirring, Blair's, for iron analysis; brass frame; complete with Stirrers, Asbestos Plate, Beakers and Covers ..... 28 30



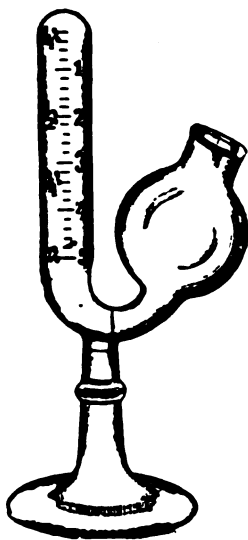
2289/2



2290/1



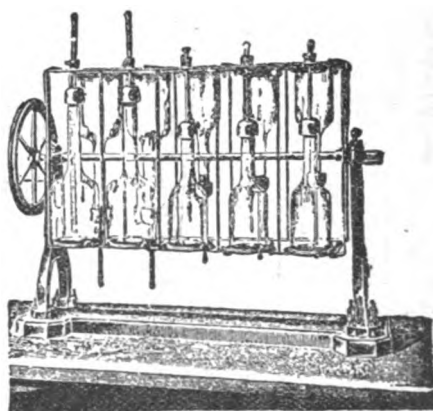
2290/2



2292



2294



2290/3

- \*I 2290/2—Apparatus, for stirring, for hand or power, finest German make.

For	4	6	8 beakers.
	\$30 00	36 00	43 50

- \*I 2290/3—Apparatus, Shaking, according to Wagner, for hand or power, made entirely of metal; without bottles.

For	6	8 bottles.
	\$54 00	72 00

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*2292—**Apparatus, Einhorn's, FOR THE ESTIMATION OF SUGAR IN URINE "Einhorn's Fermentation Saccharometer."** Set of 2 in box, with one graduated test-tube, not shown on illustration. (Illustr. p. 75).....

\$1 65  
0 80

Single Saccharometer without graduated test-tube.....

**DIRECTIONS:** Take one gramme of commercial compressed yeast, (or  $\frac{1}{8}$  of a cake of Fleischmann's yeast), shake thoroughly in the graduated test-tube with 10cc. of the urine to be examined. Then pour the mixture into the bulb of the Saccharometer. By inclining the apparatus the mixture will easily flow into the cylinder, thereby forcing out the air. Owing to the atmospheric pressure the fluid does not flow back, but remains there.

The apparatus is left undisturbed for 20 to 24 hours in a room of ordinary temperature.

If the urine contains sugar, the alcoholic fermentation begins in about 20 or 30 minutes. The evolved carbonic acid gas gathers at the top of the cylinder, forcing the fluid back into the bulb. On the following day the upper part of the cylinder is filled with carbonic acid gas. The changed level of the fluid in the cylinder shows that the reaction has taken place and indicates by the numbers to which it corresponds, the approximate quantity of sugar present.

If the urine contains more than one per cent of sugar, then it must be diluted with water before being tested.

Diabetic urines of straw color and a specific gravity of 1.018 to 1.022 may be diluted twice; of 1.022 to 1.028 five times, of 1.028 to 1.038 ten times.

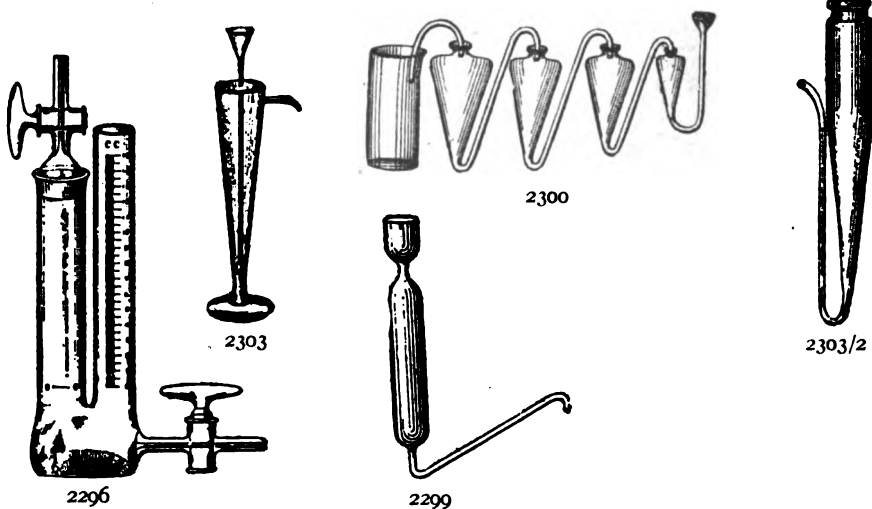
The original (not diluted) urine, contains in proportion to the dilution two, five or ten times more sugar than the diluted urine.

In carrying out the fermentation test it is always advisable to take, besides the urine tested, a normal urine and to make the same fermentation test with it.

The mixture of the normal urine with yeast will have on the following day only a small bubble on the top of the cylinder. This proves at once the efficacy and purity of the yeast.

If in the suspected urine there is likewise a small bubble on the top of the cylinder, then **no sugar** is present, but if there is a much larger gas volume, then we **know** that the urine contains sugar.

REMEMBER OUR DISCOUNT.



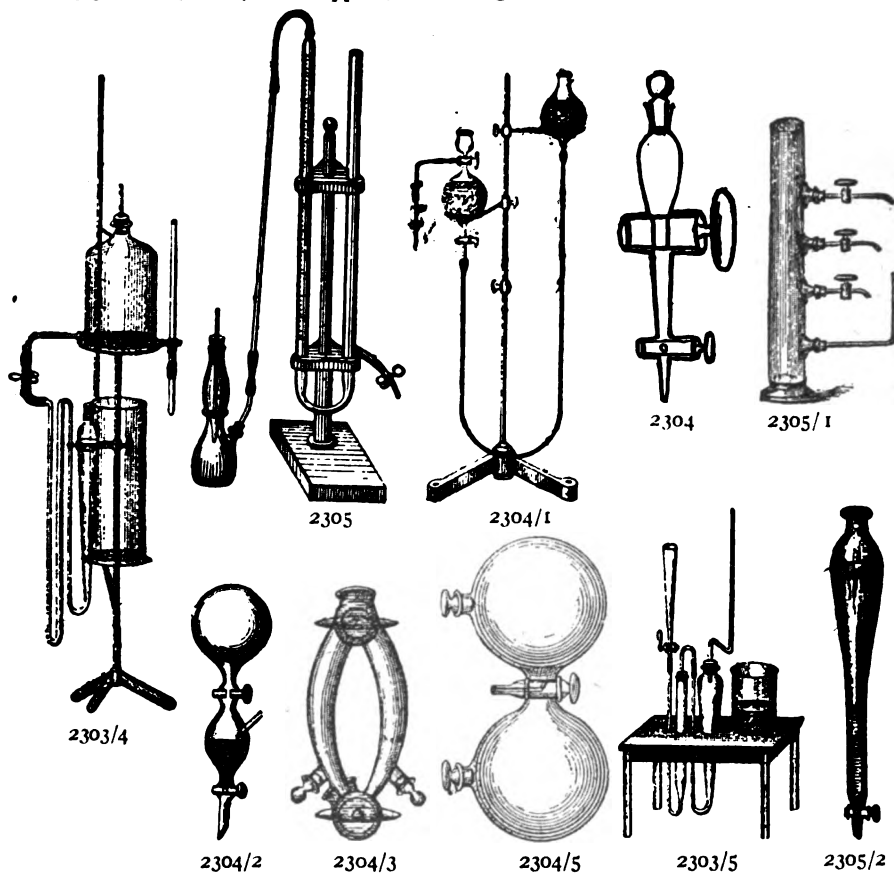
- 2293—**Apparatus, a very convenient test-set for physicians,** consisting of a set of two Einhorn's Fermentat on Saccharometers with graduated test-tube No. 2292, a Doremus Ureometer on glass foot with pipette No. 9851/2 and a Squibb's Urinometer with thermometer No. 6426. Complete.....

6 00

- \*2294—**Apparatus, Fermentation; Smith's Fermentation Tubes.** For bacteriological and urinary work. (Illustr. p. 75.)

13 cm. 18 cm. high.  
Each \$0 35 0 45

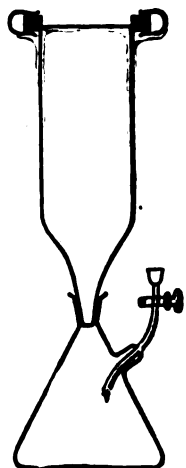
*2296—Apparatus, according to Greiner, for determining the specific gravity of liquids and solids. (Illustr. p. 76)	\$ 5 60
*2299—Apparatus, for testing soap. (Illustr. p. 76)	1 00
*2300—Ditto, for the analysis of soils, according to Noebell. (Illustr. p. 76)	5 00
2301—Ditto, ditto, with support	7 50
2302—Ditto, ditto, with aspirator and jar	14 50
*2303—Apparatus, for the analysis of soils, according to Schultz. (Illustr. p. 76)	3 10
2303/1—Ditto, ditto, consisting of reservoir, three conical elutriating vessels No. 2303 and support	22 50
*I 2303/2—Apparatus, for the analysis of soils, according to Schoene, as illustrated. (Illustr. p. 76)	3 10
I 2303/3—Ditto, ditto, a graduated Picnometer, according to Schoene	3 45
*I 2303/4—Ditto, ditto, according to Schoene	31 00
*I 2303/5—Ditto, ditto, with support, according to Schoene-Orth	21 85



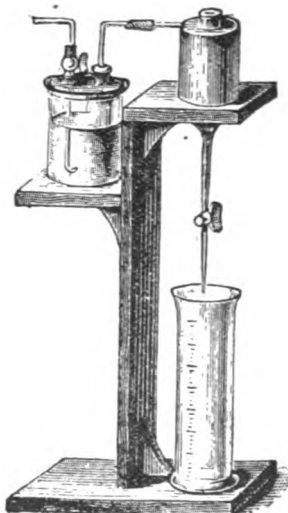
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*2304—Apparatus, for separating small particles of rock in heavy solutions, according to Broegger-Harada.	
small; bore of upper stop-cock 15 mm	\$13 35
large; bore of upper stop-cock 22-25 mm	18 00
*2304/1—Apparatus, Separatory, according to Dr. A. Drechsel, with separatory funnel with 2 stop-cocks, etc., and with reservoir.	
Capacity	250 500 1000 cc.
Without support, each	\$6 65 7 60 9 50
*I 2304/2—Apparatus, Separatory, according to Dr. F. Fuchs	4 40
*I 2304/3—Apparatus, Separatory, Wueffling's	8 65
*I 2304/5—Apparatus, Separatory and Shaking, according to Schuetze.	
Capacity of bulb	100 300 500 1000 cc.
	\$3 00 4 00 4 50 7 50
Apparatus, Separatory. See also No. 5586.	
*2305—Apparatus, according to Knopp-Schultze, for the determination of nitrogen in soils; with support	11 25

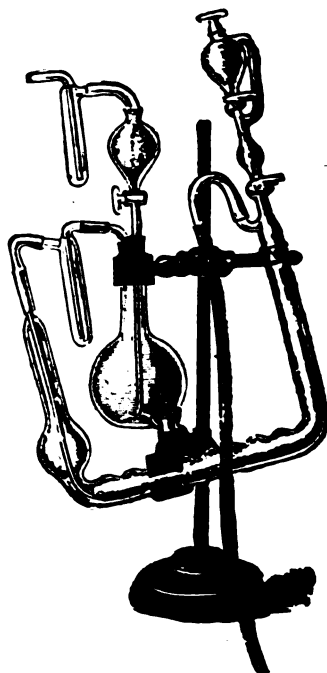
*2305 1—Apparatus, for the analysis of soils, Knopp's. (Illustr. p. 77)	8 00
*2305 2—Ditto, for the analysis of soils with stop-cock; graduated in cc <sup>a</sup> . (Illustr. p. 77)	4 40
*I 2305/5—Apparatus, according to Reich, for the determination of sulphurous acid (Winkler 1892, 111, Hempel 1890, 241)	16 65
**2306—Apparatus, according to Koppmaier, for determining sulphur in iron by means of bromine.	
With stop-cock	\$3 10
Without stop-cock	1 55
*2306/1—Apparatus, according to Dudley, for determining sulphur in iron, by bromine.	
Without	
and with support and clamps.	15 80
\$13 30	



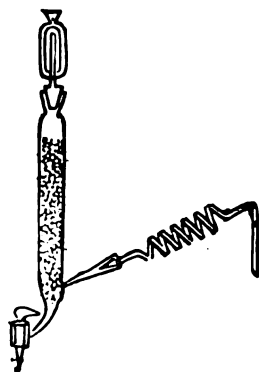
2306/2



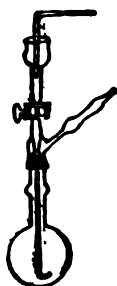
2305/5



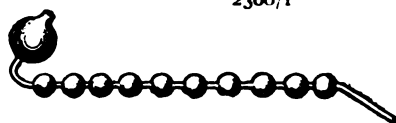
2306/1



2307/1



2307



2306

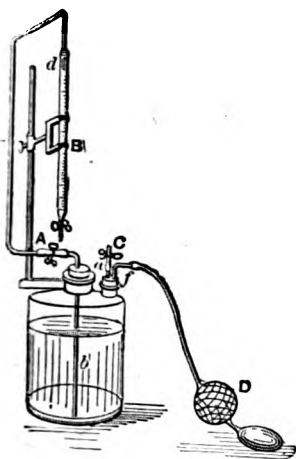


2306

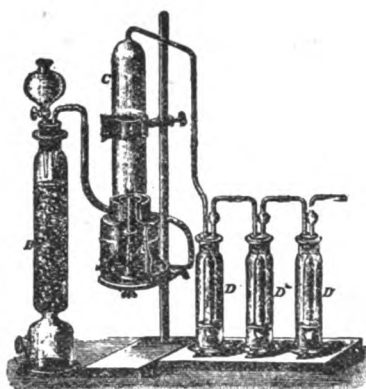
*2306/2—Apparatus, according to Wiborgh, for the rapid estimation of sulphur in iron and steel. ("Journ. of Applied Chem.," Vol. vi, No. 6, June 1892). Glass parts, with ring and clamp	8 30
*2307—Apparatus, according to Finkener, for determining sulphur in iron	5 00
*2307/1—Apparatus, Burette with stop-cock, filled with glass beads, with condensing worm and wash bottle for No. 2307	5 80



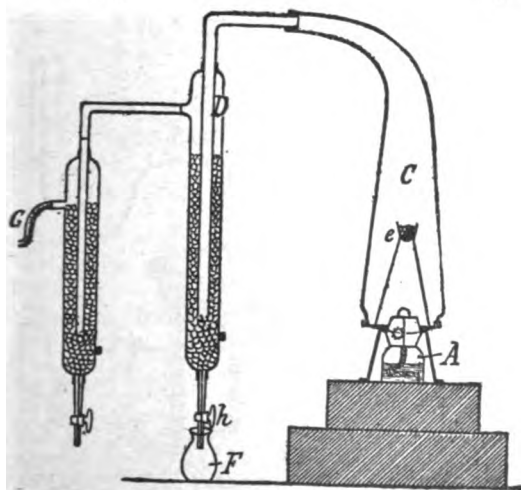
*2307/3— <b>Apparatus</b> , Scheibler's, for the extraction of sugar.....	\$4 00
*2308— <b>Apparatus</b> , Drehschmidt's, for the determination of sulphur in illuminating gas.....	37 50
*2308/1—Ditto, ditto, modified form.....	15 00
*I 2308/2— <b>Apparatus</b> , for the estimation of sulphur in oils, according to Allen.....	18 75
*2308/3— <b>Apparatus</b> , Titration, for volumetric estimation of liquids, Hoebeling's, (Journal of Anal. Chem., 1890, April).....	8 75
*I 2308/4— <b>Apparatus</b> Titration, according to Knoepfler. (Illustr. p. 80.) Complete.....	9 35
*2308/10—Ditto, for titration with baryta water, according to Hesse. (Illustr. p. 80.).....	3 75



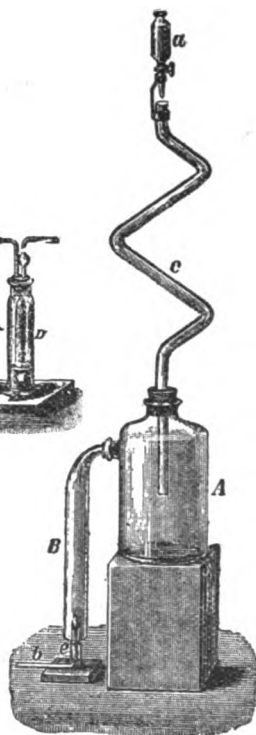
2308/3



2308



2308/2



2308/1

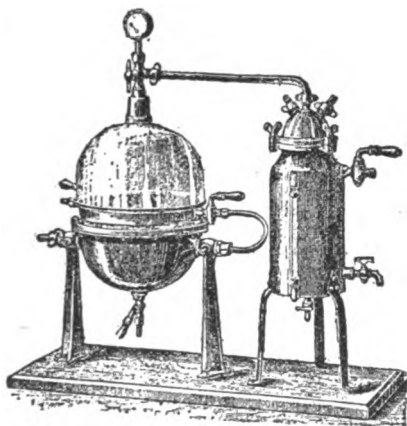
APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

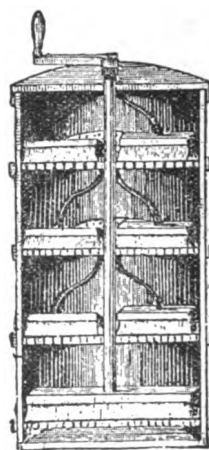
*I 2309— <b>Apparatus</b> , Vacuum, for laboratory experiments, capacity of the lower half 5 liters. Vacuum produced by filter-pump, air pump or by use of steam direct from boiler. (Illustr. p. 80).....	190 00
<b>Imported, duty free, at</b> .....	135 00
*2309/1— <b>Apparatus</b> , Vacuum, for liquids which attack metal, consisting of a porcelain dish, 26 cm. diameter, of a capacity of 2 liters, and a glass cover fitting the porcelain dish air-tight, inserted in a copper kettle with constant water level. With rubber stopper and two glass stop-cocks. (Illustr. p. 80).....	70 00
<b>Imported, duty free, at</b> .....	51 00

**Apparatus, Vacuum, for the evaporation of liquids in vacuo,** furnished to order in any desired design or size at lowest prices

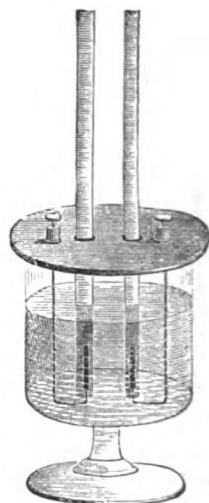
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| *1 2309/2—Apparatus, Washing, Sifting and Separating, with four sieves.....  | \$33 00 |
| *2309/3—Apparatus for the analysis of water, according to Willard (Hart's Journal of Anal. Chem., April 1889).....           | 33 00   |
| *2310—Ditto, for the decomposition of water and collection of the gases separately in graduated tubes. (Illustr. p. 81)..... | 2 00    |
| 2311—Ditto, ditto, larger.....   | 2 30    |



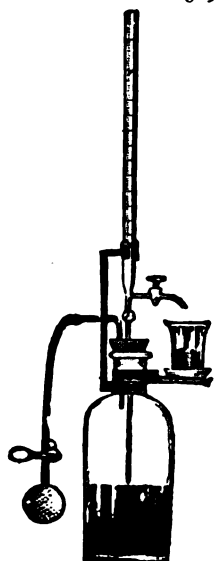
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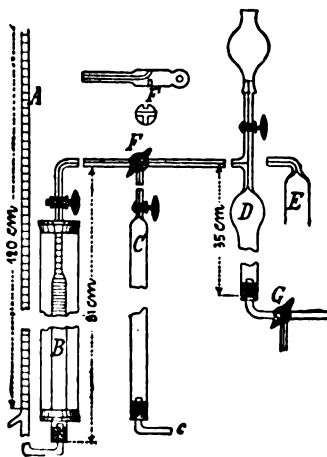
2309/2



2312



2308/4



2309/3



2309/1

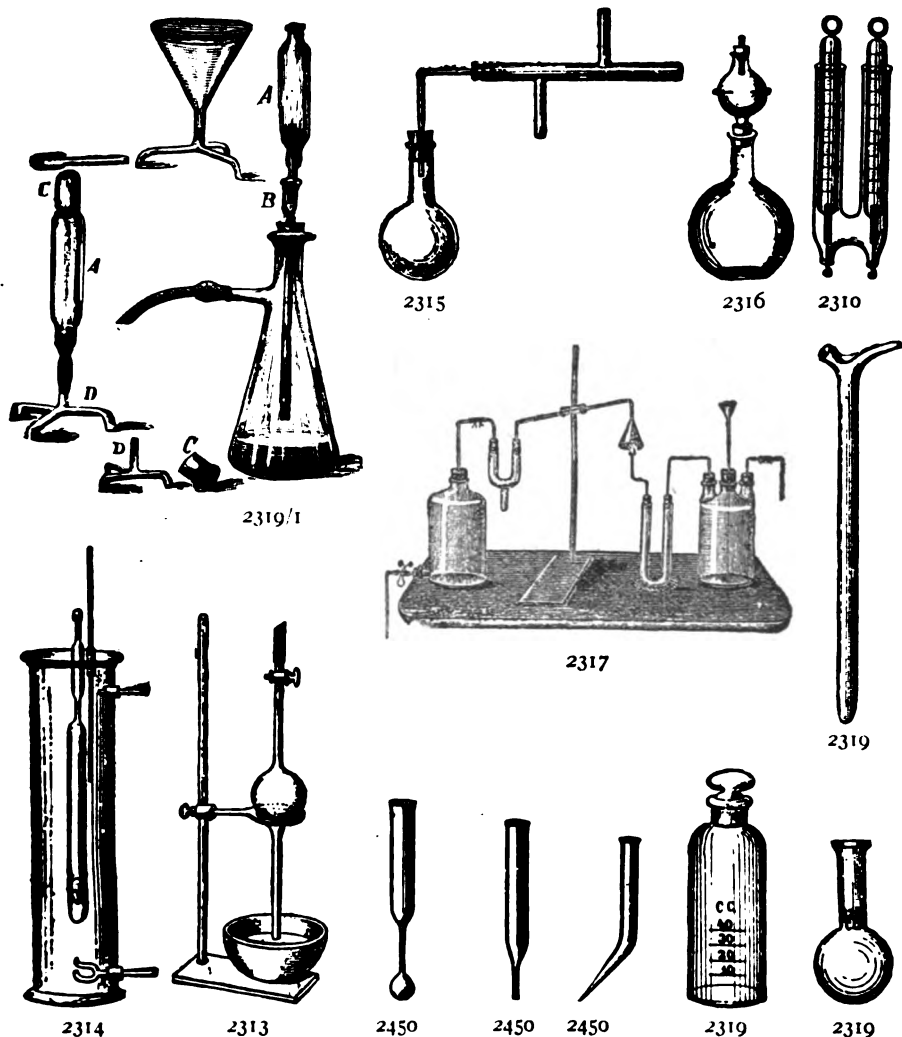


2308/10

- |  |       |
|--|-------|
| *2312—Apparatus for the decomposition of water and collection of the gases separately; goblet shaped, large, with platinum electrodes, binding screws and graduated measuring tubes..... | 7 50  |
| *2313—Ditto, for showing the volumetric relations of water and steam; the bulb tube with stop-cock only. (Illustr. p. 81).....   | 2 35  |
| *2314 Ditto, for showing the maximum density of water. (Illustr. p. 81).....   | 6 75  |
| *2315—Ditto, to demonstrate that steam is lighter than air. (Illustr. p. 81).....  | 2 00  |
| *2316—Ditto, for the decomposition of steam by electric spark; glass globe with electrodes and boiling flask. (Illustr. p. 81).....  | 3 75  |
| *2317—Ditto, to illustrate the formation of water by the combustion of hydrogen. (Illustr. p. 81).....   | 10 00 |

REMEMBER OUR DISCOUNT.

- \*\*2319—Apparatus for testing water**, according to Boutron and Boudet.  
Burette, graduated bottle and flask ..... \$ 4 50
- \*2319/1—Apparatus for weighing on tared filters**, according to De-Koninck, complete ..... 6 25
- ANY APPARATUS, NOT MENTIONED, WILL BE FURNISHED TO ORDER AT SHORT NOTICE AT REASONABLE RATES.**
- 2320/5, etc—Apparatus, Electrical, Toepler-Holtz Machines.** See Catalogue of Physical Apparatus.
- 2425, etc.—Leyden Jars.** See Catalogue of Physical Apparatus.
- \*\*2450—Arsenic Tubes**, with bulb, straight or bent; each, 10 cts.; per doz. 60



**APPROXIMATE EQUIVALENTS:**

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

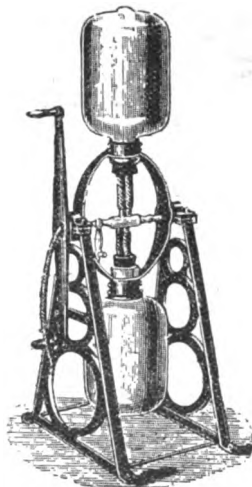
- 2459—Asbestos.** See *List of Chemicals*.
- 2460—Asbestos Cloth, heavy**, for filtering acids, etc., per sq. dm. \$0.20;  
per sq. mtr. .... 11 25
- 2461—Asbestos Cord or Twine**, for suspending articles subjected to a  
high degree of heat, per Hecto. \$1 05; per Kilo ..... 7 75
- 2462—Asbestos Paper** ..... single and double thickness.  
Per sq. mtr. .... \$0 65cts. 1 30
- Per Kilo ..... 55

2463—Asbestos Plates, 3 mm. thick, to be used instead of sand for heating beakers, flasks, etc. Any size or shape cut to order. <b>Uncut,</b>			
per Kilo.....			\$ 55
Cut in plates.....	10x10 cm.	13x13 cm.	15x15 cm.
Each.....	\$0 07	10	13
Per dozen.....	70	1 00	1 25
2464—Asbestos Plates, 1½ mm. thick; <b>Uncut,</b> per Kilo.....			
55			
Cut in plates.....	10x10 cm.	13x13 cm.	15x15 cm.
Each.....	\$0 05	08	09
Per dozen.....	50	75	90
2465—Asbestos Plates, 4 ¼ mm. and 6 mm. thick; <b>Uncut,</b> per Kilo.....			
55			

REMEMBER OUR DISCOUNT.



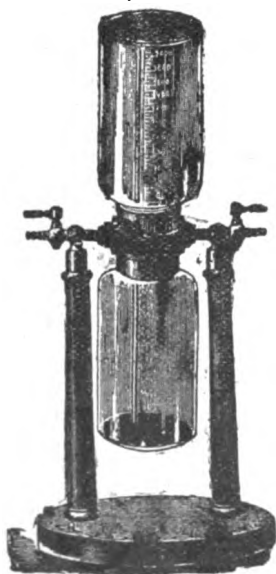
2480



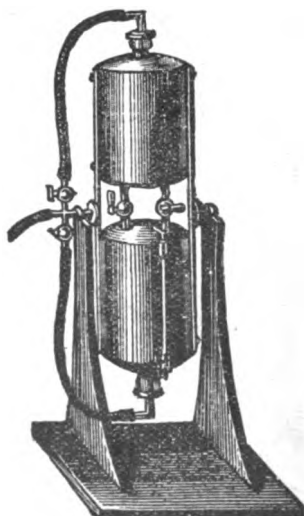
2480/1



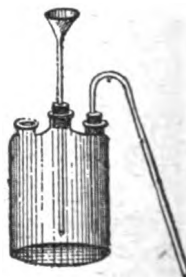
2482 &amp; 2482/1



2480/2



2481



2484

\*2480—Aspirators, of japanned zinc.

	5	10	20 liters.
With cork stoppers.....	\$6 00	6 65	12 00
With French Rubber stoppers.....	6 65	7 50	13 00

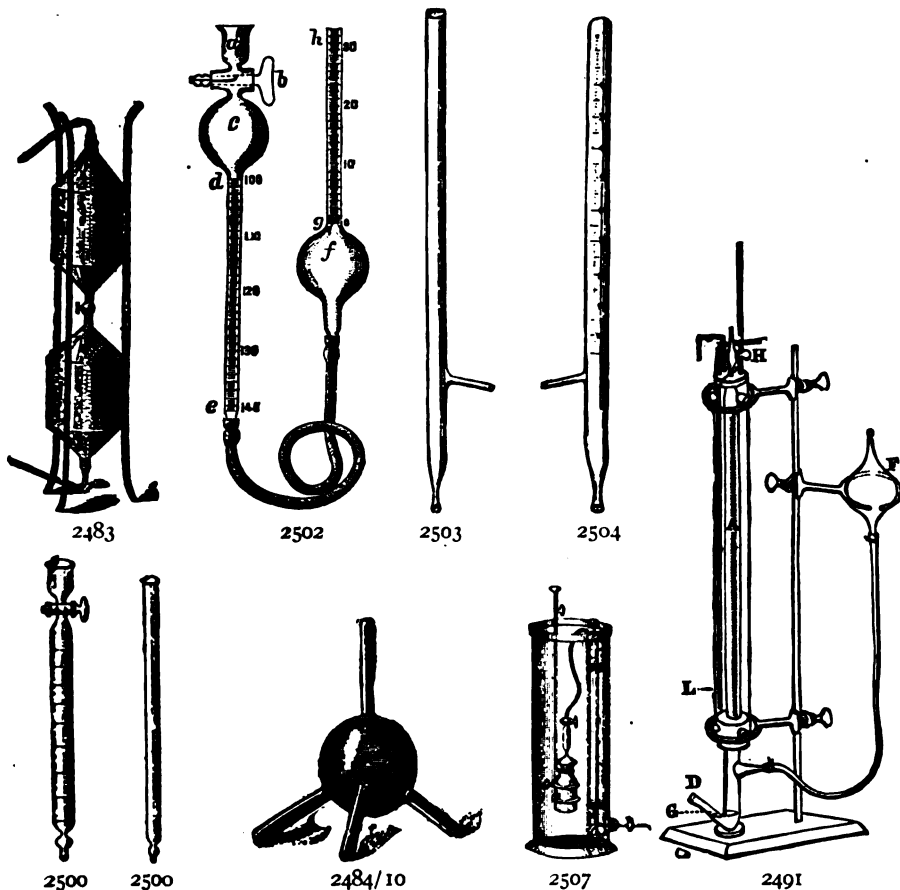
\*I 2480/1—Ditto, **double.** Two glass receivers, capacity 5 liters each, in metal frame, for uninterrupted exhaustion; each.....

73 00

\*I 2480/2—Ditto, ditto, another form.

Capacity,	3 liters.	5 liters.
Each.....	\$53 50	60 00

- \*2481—**Aspirators**, of japanned zinc, **double**, according to **Magnus**, for turning without change of tubing; each reservoir 10 liters capacity. (Illustr. p. 82) ..... \$33 00
- \*2482—Ditto, of zinc, **Winkler's**. (See Technical Gas Analysis, Winkler and Lunge.) (Illustr. p. 82) ..... 20 00
- \*2482/1—Ditto, ditto, ditto, of copper, finely finished. (Illustr. p. 82) ..... 33 25
- \*2483—Ditto, of zinc, **double**, with double tripod for reversing.  
Capacity of both reservoirs combined. .... 10 lit. 20 lit.  
Each ..... \$12 00 16 65
- \*2484—Ditto, Liebig's form, with syphon and funnel-tube. (Illustr. p. 82.)  
1/2 lit 1 lit. 2 lit. 4 lit.  
With cork stoppers .... \$1 10 1 65 2 35 3 75  
With rubber stoppers. 1 40 2 00 2 75 4 20
- \*I 2484/10—**Atom Models**, according to **Kekule-Bayer**, for the geometrical representation of the structure of organic compounds, consisting of 20 black balls, 10 red balls, 30 white balls, 10 yellow balls, 10 green balls, 10 violet balls, 10 silver balls, and 15 connections ..... 33 00

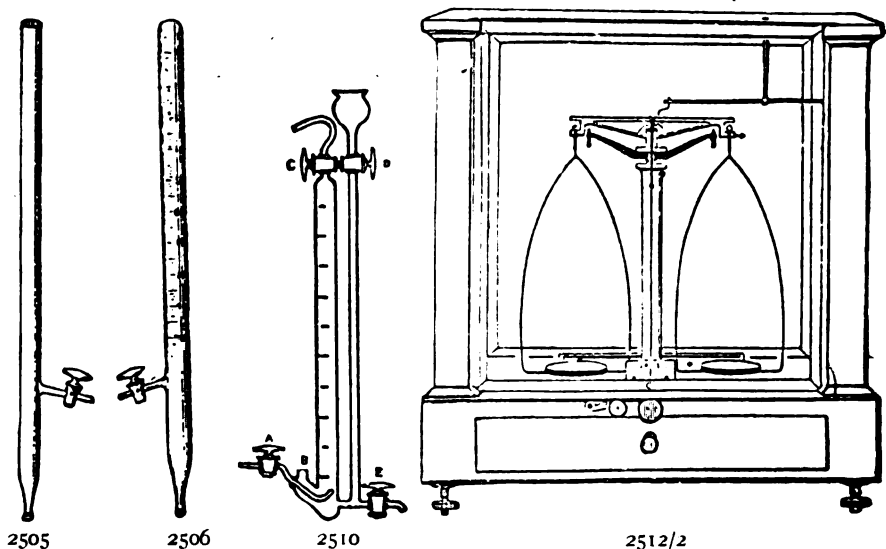


**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

- 2490—**Azotometer**, according to Prof. Johnston, complete, with jacket ..... 14 50
- \*I 2491—Ditto, ditto, mounted on heavy iron support ..... 18 50
- \*2500—Ditto, G. Lunge's, (see Winkler's Gas Analysis), the glass parts.  
50 cc. 1/2 ..... 5 00  
100 cc. 1/2 ..... 6 25
- 2501—Ditto, ditto, with support.  
50 cc. 1/2 ..... 8 00  
100 cc. 1/2 ..... 9 25
- \*2502—Ditto, according to Lunge, for the estimation of the commercial value of saltpetre ..... 7 50
- 2502/1—Ditto, ditto, with support ..... 10 50
- \*2503—Ditto, according to Zulkowsky, plain ..... 62
- \*2504—Ditto, ditto, graduated ..... 2 10






*2505—Azotometer, according to Zulkowsky, plain, with stop-cock .....	\$ 1 80
*2506—Ditto, ditto, graduated, with stop-cock .....	4 25
*I 2507—Ditto, according to Knopp, for determining Nitric Acid, (Winkler 1877, 46). (Illustr. p. 83) .....	33 75
*2510—Ditto, according to Dr. W. G. Levison .....	10 00
2511—Ditto, ditto, mounted .....	13 50

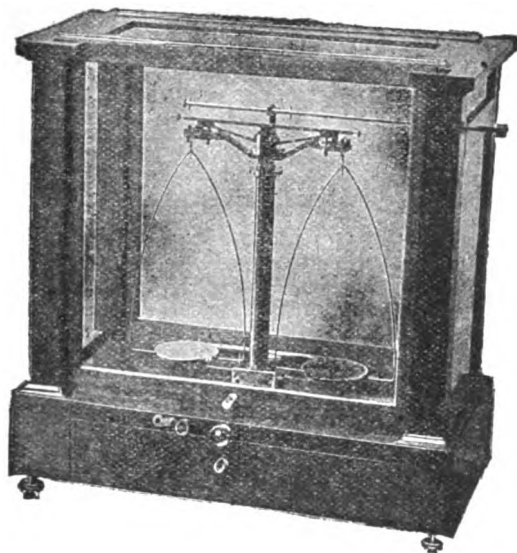
REMEMBER OUR DISCOUNT.



## BALANCES AND SCALES.

All our own balances are marked  and are warranted to be just as represented.

-  2512—Balance, Heil's No. 6 Improved Analytical Balance, for a charge up to 100 grammes in each pan, all bearings agate, sensitive to  $\frac{1}{4}$  milligramme with its full charge, with arrest for pans and beam, apparatus for rider and glass top ..... 50 00
-  2512/1—Ditto, ditto, Heil's No. 6A. Same as No. 6, without Rider ..... 45 00
-  \*2512/2—Balance, Heil's No. 6B Short Beam Analytical Balance, for a charge up to 100 grammes in each pan; in French polished mahogany glass case; front sliding frame counterpoised; beam 15 cm. long; divided in  $\frac{1}{10}$  parts of milligramme with new improved arrangements for arrest of pans; provided with wood stand for taking specific gravity; agate bearings, sensitive to  $\frac{1}{10}$  part of a milligramme; pans 63 mm. in diameter, bows 115 mm. Rider can be used from 0 point. Beam is divided from the center ..... 54 00
-  2512/3—Balance, Heil's No. 6B Short Beam Analytical Balance, with agate knife edges ..... 60 00
-  \*2512/4—Balance, Heil's No. 6C Analytical Balance, for a charge up to 100 grammes in each pan; French polished mahogany glass case with counterpoised front sliding frame and glass in the top to admit light freely. The beam is divided from the center into 60 divisions on each side. Rider can be used from 0 point. All bearings agate planes and agate knife edges. The balance is provided with new arrangement for arrest of pans and beam, apparatus for specific gravity, riders and weighing tubes. Pans 63 mm. in diameter. Bows 115 mm. Sensitive to  $\frac{1}{10}$  milligramme. (Illustr. p. 85) ..... 85 00



2512/4



2512/5

**2512/5—BALANCE, HEIL'S ANALYTICAL BALANCE No. 200 WITH NON-CORROSIVE WEIGHTS.** This is our new Aluminium Short Beam Analytical Balance for a charge up to 100 grammes in each pan; **sensitive to  $\frac{1}{10}$  milligramme.** It has **agate knife edges and agate bearings.** Rider has clean sweep across and can be used from 0 to both ends of beam, which is graduated in  $\frac{1}{10}$  milligramme. Space between bows 10 cm. Entire scale is heavily nickel-plated, with **platinum plated pans.** Furnished with apparatus for specific gravity and metal stand with counterpoise for weighing tubes.

No latch is put on pan arrest to keep same down; the sudden jar caused by releasing the latch injures the knives.

The push-button is slightly turned to hold the pan arrest down, enabling the operator to free his hand.

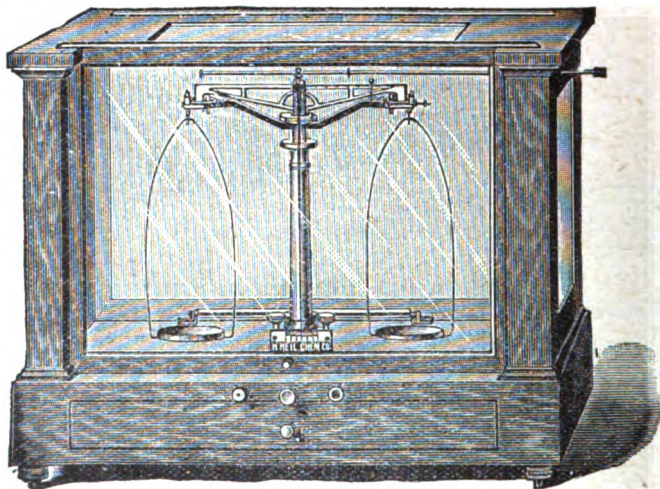
Balance is furnished with a set of accurately adjusted Analytical Weights, **heavily plated with platinum**, from 50 grammes to 1 milligramme and 3 riders.

**WE CLAIM THAT THIS SCALE IS SUPERIOR TO ANY ANALYTICAL BALANCE ON THE MARKET SOLD AT A SIMILAR PRICE.**

\$75 00

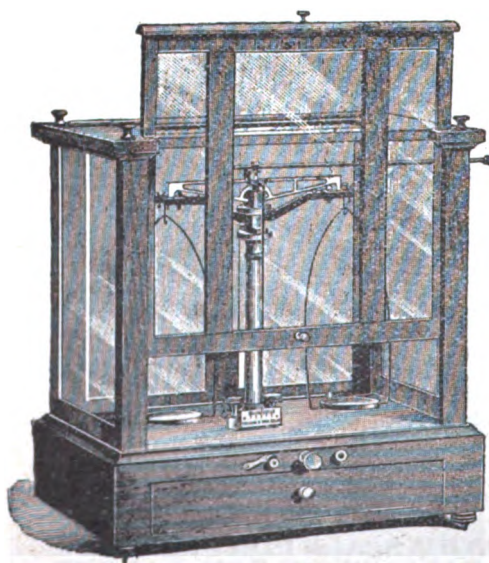
**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 gm.; 1 pound = 450 gm.

- 2513—Balance, Heil's No. 7 Short Beam Analytical Balance,** improved construction, for a charge up to 100 grammes in each pan, in French Polished Glass Case, front sliding frame counterpoised, and glass top to admit more light on rider. All bearings agate planes with new improved arrangements for arrest of pans and beam, sensitive to  $\frac{1}{10}$  milligramme with its full charge. Provided with apparatus for specific gravity, rider and weighing tubes. Beam divided in  $\frac{1}{10}$  part of milligramme. Pans 63 mm. in diameter, bows 115 mm. Dimensions of case, 50 cm. long, 40 cm. high, 23 cm. deep..... \$ 85 00
- 2513/1—Balance, Heil's No. 7 Short Beam Analytical Balance.** With Agate knife edges ..... 95 00
- 2513/2—Balance, Heil's No. 7 Short Beam Analytical Balance.** Same as No. 2513, but with Aluminium Beam ..... 95 00
- 2513/3—Balance, Heil's No. 7 Short Beam Analytical Balance.** Same as No. 2513, but with Aluminium Beam and Agate knife edges 105 00



2513

- 2513/4—Balance, Heil's No. 7A Portable Short Beam Analytical Balance** for a charge up to 100 grammes in each pan, sensitive










2513/4

to  $\frac{1}{10}$  milligramme with its full charge, in French polished mahogany glass case, with glass top to admit more light on rider. In general particulars, same Balance as No. 2513, but arranged in such a manner that it can be taken apart easily and packed close in a handsome, strong leather valise with good lock for transport. All metal work of Balance, pillar, beam, pans, etc., are nicely fitted in drawer of the Balance, also, if desired, a set of weights, No. 9954 or 9955 (Weights charged for extra). Size of valise, 45 cm. long, 25 cm. high, 23 cm. wide, weighing all packed, 9 kilos. Glass case and balance can be set up in 15 minutes..... 100 00

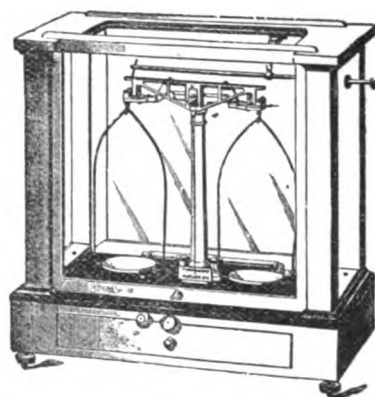
REMEMBER OUR DISCOUNT.





	2513/5—Balance, Heil's No. 7A Portable Short Beam Analytical Balance with agate knife edges .....	\$110 00
	2514—Ditto, ditto, Heil's No. 8. Same as 2513. For 200 grammes in each pan. Pans 75 mm. in diameter. Dimensions of case, 53 cm. long, 43 cm. high, 25 cm. deep .....	100 00
	2514/1—Ditto, ditto, Heil's No. 8. With Agate knife edges .....	110 00
	2515—Ditto, ditto, Heil's No. 9. With adjustable shelf for supporting beaker with water when taking specific gravities .....	113 00
	2515/1—Ditto, ditto, ditto, Heil's No. 9. With Agate knife edges..	123 00
	2515/2—Balance, Heil's No. 7 Analytical Long Beam Balance, for a charge up to 100 grammes in each pan, in fine French polished glass case, front sliding frame counterpoised. All bearings agate planes with new improved arrangements for arrest of pans and beam, sensitive to $\frac{1}{10}$ milligramme with its full charge. Provided with apparatus for specific gravity, rider and weighing tubes. Beam divided in $\frac{1}{10}$ part of milligrammes. Pans 63 mm. in diameter, beam 25 cm. long .....	85 00
	2515/3—Ditto, ditto, Heil's No. 7 Long Beam Analytical Balance. With Agate knife edges .....	95 00



2515/5



2515/6








-  **2515/5—Balance, Heil's No. 8A Short Beam Analytical Balance** for a charge up to 200 grammes in each pan; it is mounted on heavy black glass plate in fine polished mahogany glass case, with counterpoised front sliding frame. The case has glass top to admit light freely. The beam is divided into  $\frac{1}{10}$  milligramme from center to each side of beam, and rider can be used from 0 point. All bearings and knife edges agate. The Balance is provided with new arrangement for arrest of pans and beam, apparatus for specific gravity, rider and weighing tubes. Pans 63 mm. in diameter, bows 115 mm. Sensitive to  $\frac{1}{10}$  milligramme. Dimensions of case 42 cm. long, 43 cm. high and 23 cm. deep .....
-  **2515/6—BALANCE, HEIL'S NEW ALUMINIUM SHORT BEAM NON-CORROSIVE ANALYTICAL BALANCE No. 300.** Unequaled by any other Balance sold at a similar price. For a charge of 200 grammes, sensitive to  $\frac{1}{10}$  milligramme, in fine mahogany case, with glass top to admit light freely; all bearings are agate planes with agate knife edges. The rider has a clean sweep across the beam, which is graduated on both sides in  $\frac{1}{10}$  milligrammes from the center. The entire scale, is fastened on plate glass on black, to facilitate the finding of small weights or riders when dropped.

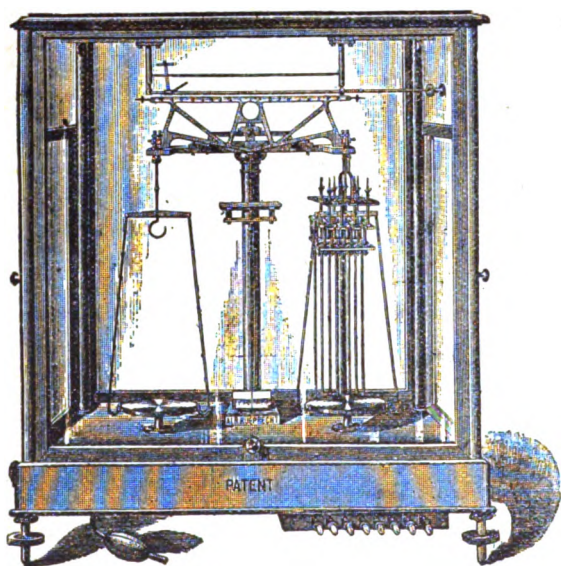
125 00

**All Parts are Heavily Plated with Platinum.**  
**Price, including a full set of accurately adjusted weights,** of which the large ones are platinum-plated and the small ones solid platinum. 100 grammes to 1 milligramme .....

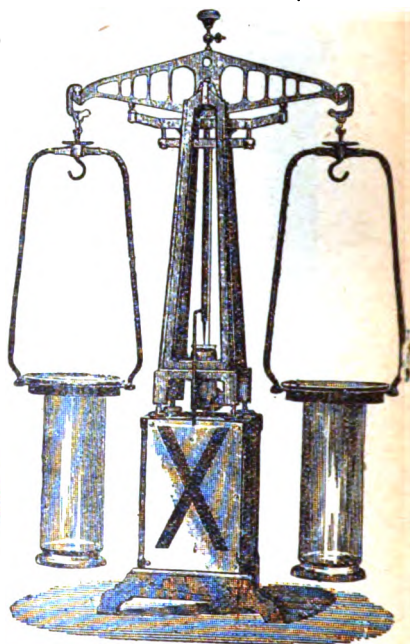
135 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gram.; 1 pound=450 grm.

	<b>2516—Balance, Heil's No. 10. Balance for scientific use,</b> in glass case, for a charge up to 500 grammes in each pan, sensitive to $\frac{1}{10}$ part of a milligramme with its full charge. All bearings Agate planes. Provided with arrest for pans and beam, also apparatus for specific gravity, rider and weighing tubes. Beam divided into $\frac{1}{10}$ part of milligrammes. Pans 10 cm. in diameter. With glass top.....	132 00
	<b>2516/1—Ditto, ditto, Heil's No. 10.</b> With Agate knife edges.....	142 00
	<b>2517—Ditto, ditto, Heil's No. 11.</b> With adjustable shelf for supporting beaker with water when taking specific gravities.....	145 00
	<b>2517/1—Ditto, ditto, Heil's No. 11.</b> With Agate knife edges.....	155 00
	<b>2518—Ditto, ditto, Heil's No. 12.</b> For a charge up to 1000 grammes in each pan, sensitive to $\frac{1}{10}$ milligramme with its full charge. Provided with arrest for pans, adjustable shelf for specific gravity, rider, &c. Beam divided into $\frac{1}{10}$ milligrammes. Pans 13 cm. in diameter.....	195 00
	<b>2518/1—Ditto, ditto, Heil's No. 12.</b> With Agate knife edges.....	205 00
	<b>2519—Ditto, ditto, Heil's No. 13. Balance for scientific use,</b> in glass case, for a charge up to 10 kilos in each pan, sensitive to one milligramme with that charge. Pans 23 cm. in diameter.....	420 00



2519/1



2519/2

\*2519/1—Balance, Automatic Analytical, of finest finish, with arrest for beam, hangers and pans, in elegant mahogany case with glass sides and top. It is provided with a mechanism for varying the sensibility and handling the weights, when the case is closed. Complete including weights of platinum from 1 gramme down.

Capacity 200 grammes, sensitive to  $\frac{1}{10}$  milligramme..... 336 00

Same, if imported duty free..... 252 00

Capacity 600 grammes, sensitive to  $\frac{1}{10}$  milligramme..... 528 00

Same, if imported duty free..... 396 00

Capacity, 1 kilogramme, sensitive to  $\frac{1}{10}$  milligramme..... 653 00

Same, if imported duty free..... 490 00

Capacity 2 kilogrammes, sensitive to  $\frac{1}{10}$  milligramme..... 797 00

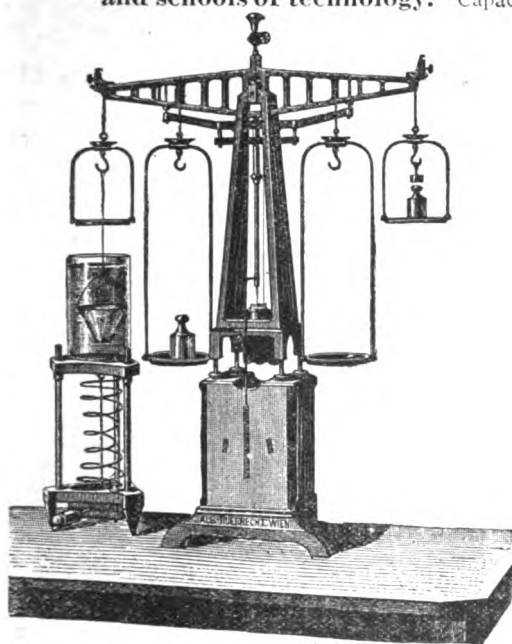
Same, if imported duty free..... 598 00

\*I 2519/2—Balance for chemical demonstrations, for determining the proportions of weight of gases, atmospheric air, the increase of weight by oxidation, etc., etc. Capacity 5 kilogrammes, showing to the audience a difference of weight of 20 milligrammes at a distance of 50 meters. With 2 tared cylinders for experiments, capacity about 2 liters, 2 tared glass plates, 2 tared magnets.

Complete..... 150 00

Same, if imported duty free..... 112 50

**I 2519/3—Balance for chemical demonstrations, for high schools and schools of technology.** Capacity 1 kilo, sensitive to 10 milligrammes. With two tared cylinders, 2 tared glass plates and 2 tared magnets



2519/4

\$ 77 00

**Same, if imported**

duty free 59 00

**\*2519/4—Balance for Physical Lecture and Demonstration purposes,** demonstrating the theory of the balance for the following experiments: Change of the centre of gravity, increase and decrease of the sensibility by lengthening or shortening of lever, testing and adjusting of balance, etc., etc., showing a sensitiveness of 10 milligrammes at a large distance, while carrying 2 kilogrammes. With lifting apparatus for balance, jar, sinking cup, two tare-weights for water and air, for demonstrating the theory of ascertaining the specific gravity of liquids and solids. With 2 weights each of one kilogramme and of half a kilogramme, made of brass, nickel-plated

**If imported duty free** 234 00

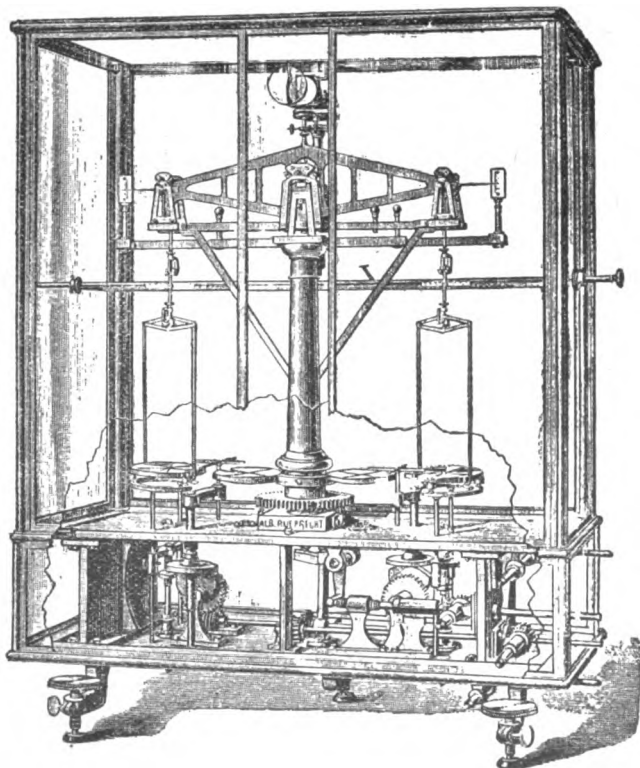
175 00

**\*2519/5—Balance of finest construction,** used by all nations belonging to the International Meter Commission in Paris, for comparing and adjusting the normal or standard weights. Capacity 1 kilo., sensitive to 1/200 milligramme; with automatic mechanism for changing the entire charge, while closed, from a distance of 3 to 4 meters; triple arrest, with horizontal mirror and square prism for reading by means of cathetometer ..... \$2750 00

**Same, if imported duty free** 2060 00

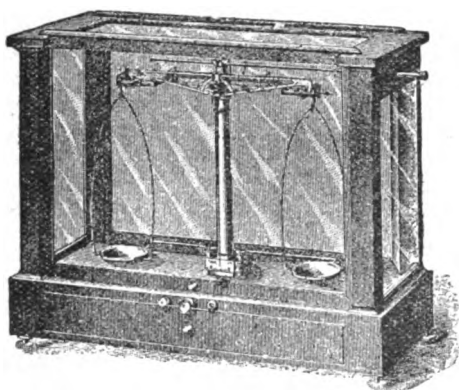
**2519/6—Ditto, ditto, but without automatic mechanism for changing the entire charge** ..... 1750 00

**Same, if imported duty free** 1310 00

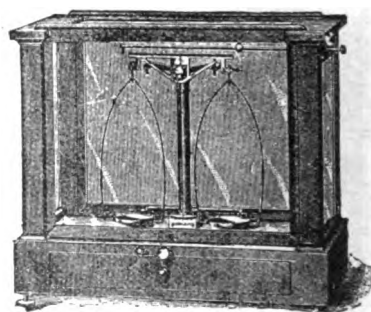


2519/5

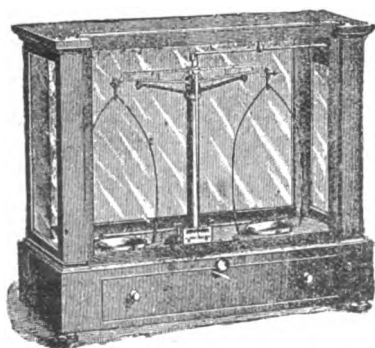
- 2538/2—**Balance, Analytical, Kohlbusch's No. 000**, for a charge of 500 grammes in each pan, sensitive to  $\frac{1}{10}$  milligramme; in handsome mahogany case, with glass top to admit light freely. Has improved pan and beam arrest and arrangement for rider, apparatus for specific gravity and weighing tubes. All bearings agate planes with steel knives. Pans 10 cm. in diameter ..... \$135 00
- \*2538/3—Ditto, ditto, **Kohlbusch's No. 1**, for a charge of 200 grammes in each pan, sensitive to  $\frac{1}{10}$  milligramme, otherwise same as No. 2538/2. 7½ cm. pans ..... 110 00
- \*2538/4—Ditto, ditto, **Kohlbusch's No. 2** for a charge of 100 grammes in each pan, sensitive to  $\frac{1}{10}$  milligramme; 63 mm. pans, otherwise same as No. 2538/2 & 3 ..... 90 00
- \*2538/5—**Balance, Analytical, Kohlbusch's No. 3 Short Arm.** Capacity 200 grammes, with improved pan and beam arrest, all bearings agate. Rider has clean sweep across the beam which is divided in  $\frac{1}{8}$  milligrammes. Provided with apparatus for taking specific gravity, 7½ cm. pans. In handsome case with glass top ..... 65 00



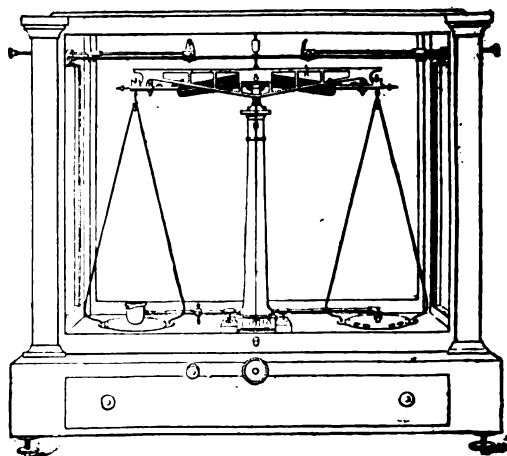
2538/3 and 2538/4



2538/5



2538/6



2539/3

- \*2358/6—**Balance, Analytical, Kohlbusch's No. B.** Capacity 100 grammes in each pan; in French polished case, front sliding door counterpoised, sensitive to  $\frac{1}{4}$  milligramme with its full charge. All bearings agate. Arrests for beam and pans, with arrangement for riders and specific gravity. Diam. of pans 7.5 cm ..... 52 00

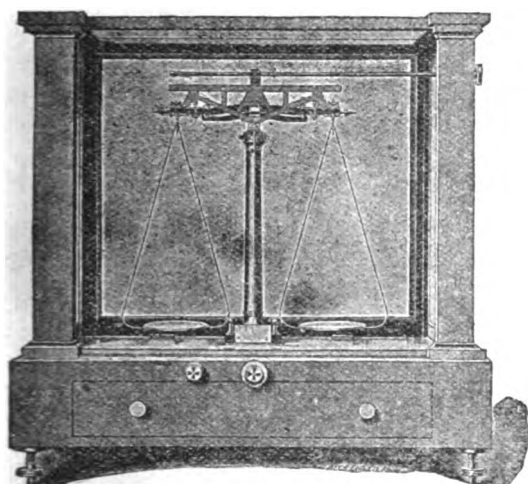
**Balances No. 2538/2, 3, 4, 5 and 6 with Agate Knife Edges \$10 00 extra.**

REMEMBER OUR DISCOUNT.

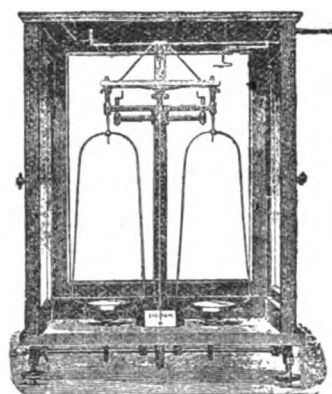
\*2538/7—**Balance, Analytical, System Bunge, with Aluminium Beam.** Steel or agate knife edges as desired and agate planes, of finest finish.

**If with Beam of Phosphor-Bronze, gilt.**

Capacity 5000 grammes, sensitive to 1 milligramme .....	\$424 00	\$371 00
Capacity 2000 grammes, sensitive to 1 milligramme.....	318 00	265 00
Capacity 1000 grammes, sensitive to $\frac{1}{4}$ milligramme....	239 00	212 00
Capacity 500 grammes, sensitive to $\frac{1}{10}$ milligramme....	159 00	135 00
Capacity 200 grammes, sensitive to $\frac{1}{10}$ milligramme....	133 00	117 00
Capacity 200 grammes, sensitive to $\frac{1}{20}$ milligramme....	130 00	114 00
Capacity 100 grammes, sensitive to $\frac{1}{10}$ milligramme....	117 00	104 00
Capacity 100 grammes, sensitive to $\frac{1}{10}$ milligramme....	112 00	98 00
Capacity 100 grammes, sensitive to $\frac{1}{20}$ milligramme....	109 00	96 00
Capacity 50 grammes, sensitive to $\frac{1}{10}$ milligramme....	98 00	88 00
Capacity 50 grammes, sensitive to $\frac{1}{10}$ milligramme....	93 00	83 00
Capacity 50 grammes, sensitive to $\frac{1}{20}$ milligramme....	91 00	80 00



2539/2



2538/7

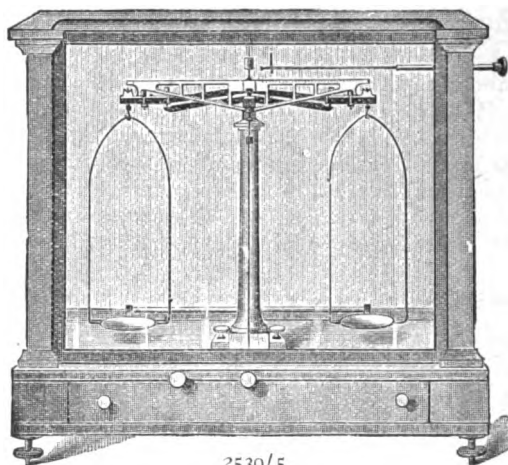
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*2539/2—**Balance, Troemner's No. 10.** Short arm pure aluminium beam, agate planes and "Agate" knives, no steel used, both arms of the beam are graduated; the pans also of aluminium; all the brass work is plated with gold; elegant mahogany case (old wood), with heavy plate glass bottom; case has glass top to admit light freely; is provided with improved self-locking pan arrest (push in the button, turn slightly to the left, this locks the arrest). Balance will carry 200 grammes, and is sensible to 1-20 milligramme. All the workmanship is of the very finest. This Balance is in use at U. S. Coast Survey and by all the large steel and iron works ..... 125 00

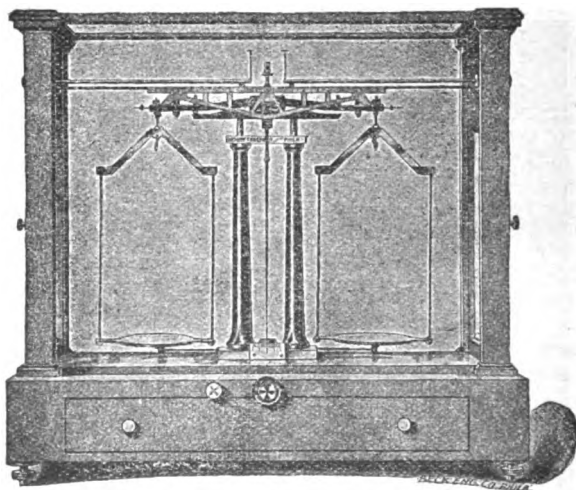
\*2539/3—**Balance, Troemner's Analytical Aluminium Balance.** Fig. 124. No. 6 (new). Of the very finest construction; capacity 200 grammes in each pan; beam 30 cm. long, and divided into  $\frac{1}{10}$  milligramme; new and improved rider arrangement on both arms of the beam; all bearings are "agate" planes; all knives also of "agate"; no steel used whatever; beam, pans and hangings are of pure aluminium; all the other parts are plated with gold, making the entire balance proof against corrosion. Pans are  $7\frac{1}{2}$  cm. in diameter; pan supports made so as to prevent elongation when loaded; sensibility  $\frac{1}{10}$  milligramme; elegant French polished case, made of very old mahogany, with glass top, to admit light freely. (Illustr. p. 90) ..... 150 00



- \*2539/5—**Balance, Analytical, Troemner's, Fig. 119, No. 0 Balance.** Capacity 500 grammes in each pan; sensible to  $\frac{1}{10}$  milligramme; all bearings agate planes; has 30 cm. beam, divided into  $\frac{1}{10}$  milligramme, 12.7 cm. pans, specific gravity apparatus, elegant French polished mahogany case, with glass top and counterpoised sliding door \$130 00
- 2539/6—Ditto, ditto, with agate knife edges ..... 140 00



2539/5

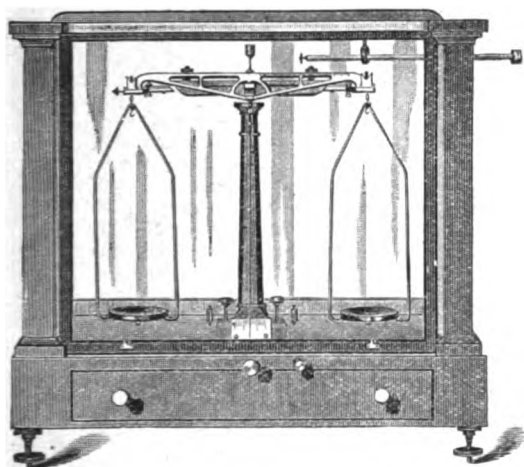


2539/7

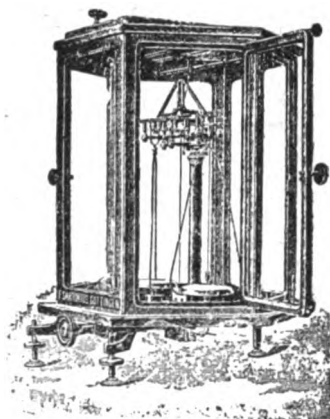
- \*2539/7—**Balance, Analytical, Troemner's No. 00 Balance.** Of very finest construction; the entire Balance in every part, is made of aluminium; has double columns, as shown in cut. Capacity 1000 grammes in each pan; sensibility  $\frac{1}{10}$  milligramme. All bearings are of "Agate," all knives also of "Agate." It is provided with double rider apparatus and every known modern improvement. Beam is 30 cm. long, pans 11.5 cm., width of pan supports, 14 cm. In a fine French polished mahogany case, with counterpoised doors ..... 185 00
- 2539/8—Ditto, ditto, same as No. 2539/7, capacity 2 kilos in each pan; sensibility  $\frac{1}{10}$  milligramme ..... 205 00

REMEMBER OUR DISCOUNT.

- \*2540—**Balance, Analytical, Troemner's No. 1.** Capacity 200 grammes in each pan; sensible to  $\frac{1}{10}$  milligramme; beam 30 cm., divided into  $\frac{1}{10}$  milligramme; pans 7.5 cm. all bearings of "Agate;" with improved pan arrest and apparatus for specific gravity; in fine French polished mahogany case, with counterpoised sliding door, etc. \$105 00
- 2541—Ditto, ditto, with agate knife edges ..... 115 00



2540

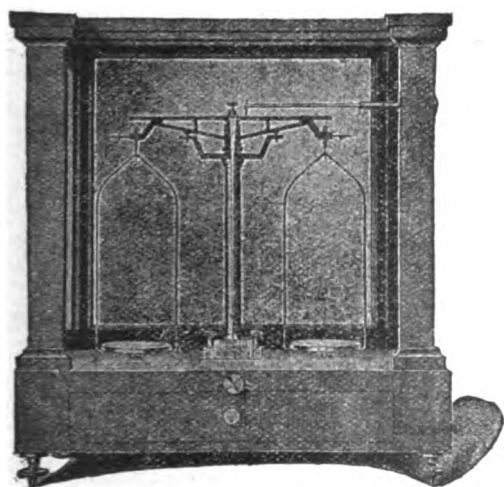


2548

- 2545—**Balance, Analytical, Troemner's No. 2.** Capacity 100 grammes in each pan; sensitive to  $\frac{1}{10}$  milligramme; beam 25 cm., divided into  $\frac{1}{10}$  milligramme; pans 63 mm., improved arrest for pans; apparatus for specific gravity; in a fine French polished glass case, with counterpoised sliding door, all of the finest finish and best construction ..... \$85 00
- 2545—Ditto, ditto, with agate knife edges ..... 95 00
- \*I 2548—**Balance, Analytical; F. Sartorius new patent short beam analytical balance,** in hexagonal bronzed metal case. Beam of aluminium or gilt phosphorus bronze. Case has two side doors and a

APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.



2555

hinged top. Agate knife edges and planes, platinum plated pans; the whole mounted on heavy black plate glass.

Capacity	100	200 Grammes.
Sensitive to	$\frac{1}{10}$ milligramme	$\frac{1}{10}$ milligramme
With Aluminium Beam	\$200 00	200 00
With Gilt Phosphorus Bronze Beam	187 50	187 50

- 2550—**Balance, Analytical, Troemner's No. 3,** in French polished mahogany case, with counterpoised sliding door. Capacity 100 grammes, sensible to  $\frac{1}{4}$  milligramme. Steel bearings, pans 9 cm. .... 40 00
- \*2555—**Balance, Analytical (Fig. 127) No. 4, Troemner's.** Specially adapted for students' use, also for manufacturing establishments, &c. Balance has open beam, graduated in  $\frac{1}{4}$  milligrammes; all bearings are "Agate," wide bows, with 7.5 cm. pans; will carry 100 grammes in each pan, sensitive to  $\frac{1}{4}$  milligramme; improved rider attachment; fine French polished mahogany glass case ..... 50 00

**\*2555/1—Balance, Analytical, Troemner's No. 11 Short Arm.**

Both arms of beam are graduated into  $\frac{1}{10}$  milligramme; beam is of aluminium, all bearings of "Agate"; capacity 200 grammes, sensibility  $\frac{1}{10}$  milligramme, the bows and pans of nickel, bows are 10 cm. wide; fine French polished mahogany case, with plate glass bottom, etc.....

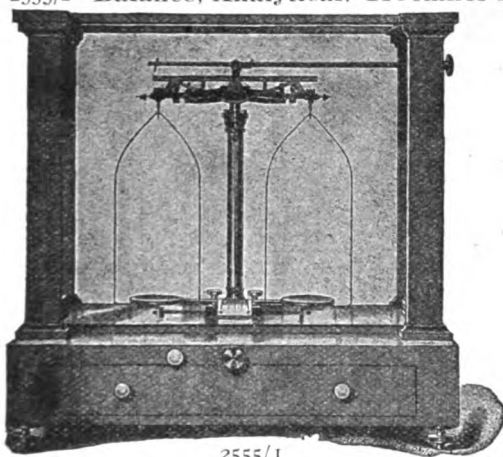
\$ 96 00

**\*2555/2—Balance, Analytical, Troemner's No. 16.**

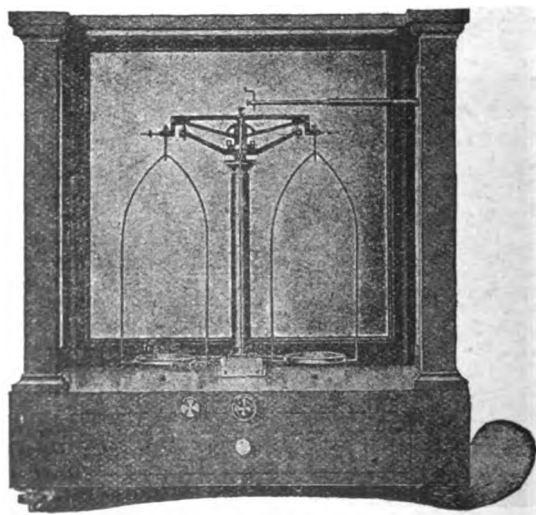
Will carry a load of 100 grammes in each pan, sensitive to  $\frac{1}{10}$  milligramme; beam is 15 cm. long and divided in  $\frac{1}{4}$  milligramme; has "Agate" bearings, with improved pan arrests and extra wide bows, &c., &c.; French polished mahogany case, with counterpoised door. This Balance is especially desirable for students' use in colleges, universities, &c. ....

60 00

REMEMBER OUR DISCOUNT.



2555/1



2555/2

**2555/13—Balance, Analytical; No. 048 Analytical Balance, new style, Ainsworth's, 15.25 cm. Beam. Sensitiveness 1-10 Milligramme. Capacity 200 Grammes.**

This balance is of the latest improved construction, the yokes and pan-rests being operated by a single thumb-piece, the yokes withdrawing first, leaving the edges in contact with the bearings, and the pan-rests which drop last, remaining in contact until the end of the stroke, then dropping quickly and allow the beam to swing. Has agate bearings.

A balance constructed in this manner is much quicker to operate and the pan-rests dropping vertically have less tendency to set the hangers in motion than when dropping through the arc of a circle as heretofore constructed.

Has French polished mahogany case with counterpoised sliding door. Dimensions 50.8 x 43 x 25.4 cm.

Price

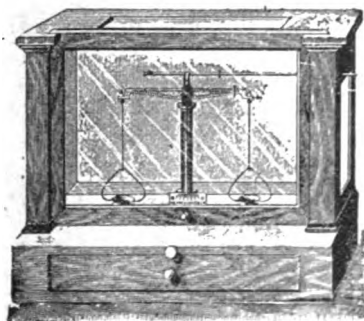
With agate edges

65 00

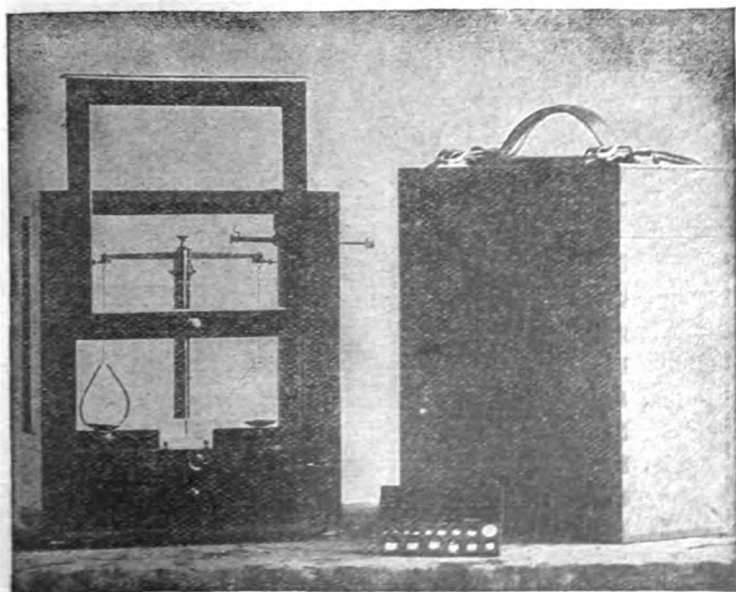
75 00



- 2556—**Balance, Heil's No. 1 Assay Balance**, in French polished mahogany glass case, sliding frame counterpoised. Can be charged up to 25 grammes in each pan. Deviation of needle on scale, 10 divisions for 1 milligramme. Steel knives with agate bearings. Dimensions of case, 38 cm. long, 33 cm. high, 20 cm. deep..... \$55 00
- \*2556/1—**Balance, Heil's No. 1A Assay Balance**, with apparatus for rider, and glass top to admit more light on rider. Needle deviates 20 divisions on scale for 1 milligramme. Dimensions of case same as No. 2556..... 65 00



2556/1




2557

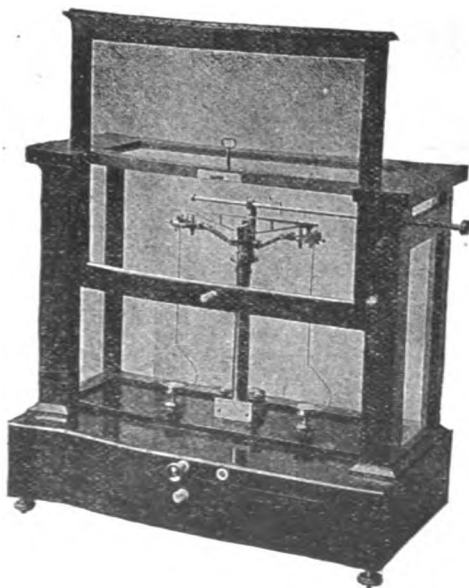
- \*2557—**Balance, Heil's No. 2 Portable Assay Balance**, in French polished glass case, 23 cm. long, 25 cm. high and 8 cm. deep; sliding frame counterpoised; packed in a light box with strap for carrying; weighing, all boxed, 2 kilos. Needle deviates 20 divisions on scale for 1 milligramme. With apparatus for rider, set of weights, 1 platinum gramme to  $\frac{1}{10}$  milligramme. Sensitive to  $\frac{1}{100}$  milligramme..... 75 00

## APPROXIMATE EQUIVALENTS:

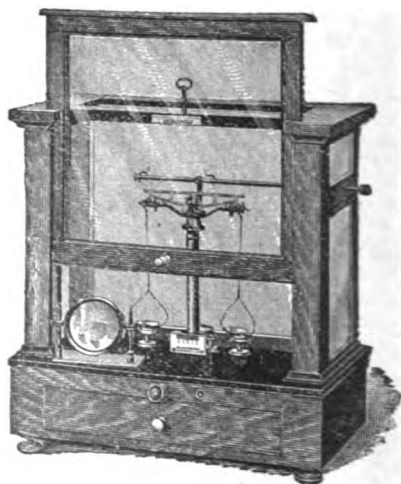
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

- \*2558/2—**Balance, Heil's No. 3 (New) Gold Button Short Beam Assay Balance**, with skeleton aluminium beam and skeleton hangers of aluminium. The very lightest and most sensitive Balance ever made. The beam is only 10 cm. long and divided from the center into 50 divisions on each side, and rider can be used from the 0 point to either side of the beam. The balance is mounted on a black glass plate. The glass case is French polished, with counterpoised front sliding frame and glass in the top. All bearings and knife edges are agate, also the arrest of hangers. The stirrups have agate points, which rest in agate bearings, so that on releasing the balance for weighing nothing can stick, and the needle will not kick. The Balance is provided with movable magnifier for ivory index plate. Dimensions of case, 33 cm. long, 30 cm. high and 16.5 cm. wide, sensitive to  $\frac{1}{100}$  milligramme. Extreme sensitiveness  $\frac{1}{100}$  milligramme ..... \$175 00




REMEMBER OUR DISCOUNT.







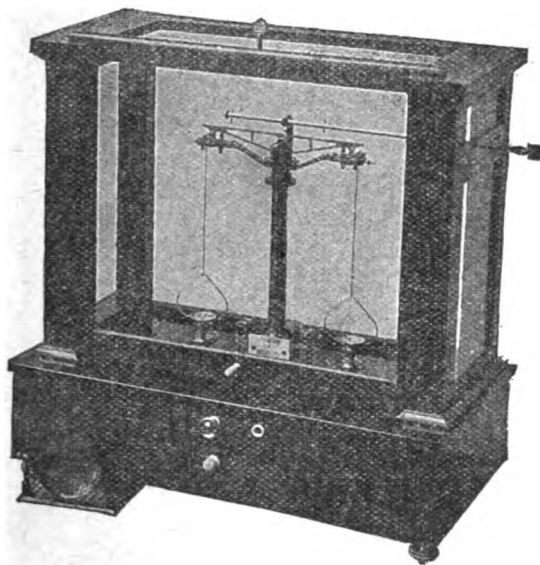
2558/3



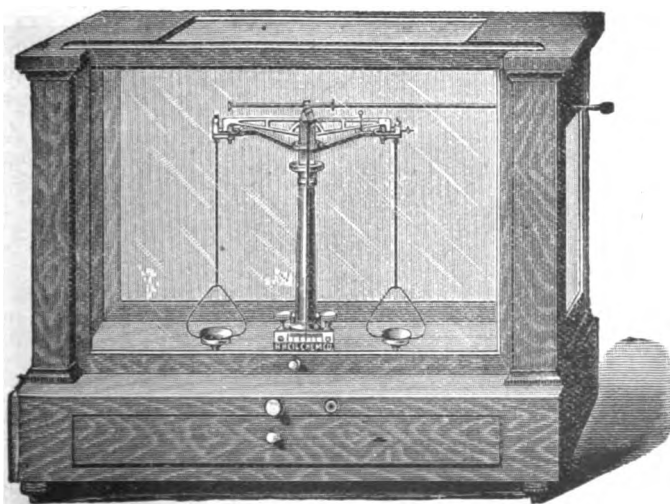
2558/2

- \*2558 3—**Balance, Heil's No. 4 (new) short Beam Assay Balance**; hard metal skeleton beam, graduated from the center into 50 divisions. Rider can be used from the 0 point. Steel knives and agate bearings. French polished mahogany glass case with counterpoised front sliding frame and glass top to admit light freely. Black glass plate bottom inside the case. Dimensions of case, 43 cm. long, 40 cm. high and 23 cm. wide. Sensitive to  $\frac{1}{100}$  milligramme ..... 102 00
- \*2558 4—**Balance, Heil's No. 4A (New) Gold Button Short Beam Assay Balance**; hard metal skeleton beam, graduated from the center into 50 divisions on each side. Rider can be used from the 0 point on either side of the beam. All bearings and knife edges are agate. French polished mahogany glass case with counterpoised front sliding frame and glass in top of case to admit light freely. Adjustable magnifier is provided for the ivory index plate. Black glass plate bottom. Dimensions of case, same as Balance No. 2558/2. Sensitive to  $\frac{1}{100}$  milligramme. (Illustr. p. 97) ..... 135 00
- \*2550—**Balance, Heil's No. 5 Short Beam Assay Balance**, in French polished mahogany glass case. Improved construction for a charge up to 10 grammes in each pan. Beam 15 cm. long, and divided into  $\frac{1}{25}$  part of a milligramme, with apparatus for rider. Beam is divided from the center and rider can be used from the 0 point. Needle deviates 25 divisions on scale for 1 milligramme. With glass top to admit more light on rider. Dimensions of case same as No. 2558 3. (Illustr. p. 97) ..... 95 00



 *2559/1—Balance, Heil's No. 5 Short Beam Assay Balance, with agate knife edges.....	\$105 00
 *2559/2—Balance, Heil's No. 5 Short Beam Assay Balance, with Aluminium Beam .....	105 00
 *2559/3—Balance, Heil's No. 5 Short Beam Assay Balance, with Aluminium Beam and agate knife edges.....	115 00
 2559/4—Balance, Heil's No. 5 Long Beam Assay Balance, same as No. 2559, but with beam 23 cm. long.....	95 00



2558/4

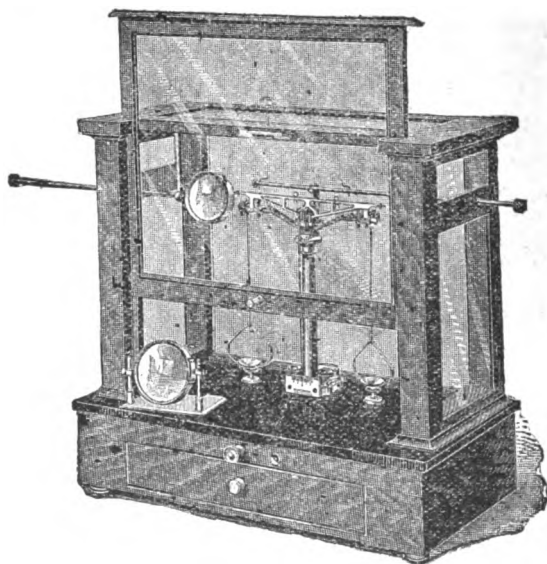


2559 to 2559/3

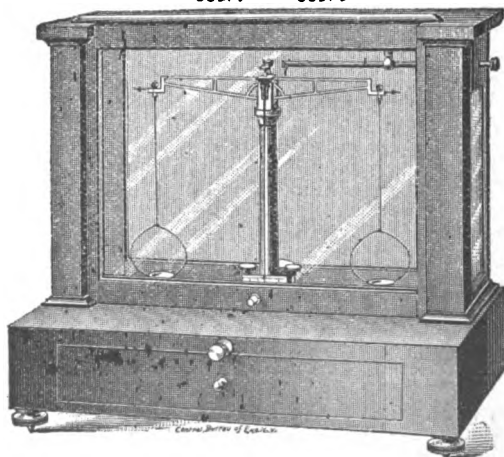
 2559/5—Balance, Heil's No. 5 Long Beam Assay Balance, with Aluminium Beam, same as No. 2559/2, but with beam 23 cm. long .....	105 00
 2559/6—Balance, Heil's No. 5 Long Beam Assay Balance, with Aluminium Beam and Agate knife edges, same as No. 2559/3, but with beam 23 cm. long .....	115 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*2559/7—Balance, Heil's No. 100 new Short Beam Assay Balance** is the best and most sensitive balance ever made. The beam hangers, needle and pans are made of pure aluminium; all bearings and knife edges agate. The beam is graduated from the center into 100 parts on each side. Rider can be used from 0 point to either side of the beam. Adjustable magnifiers are provided for reading graduations on beam and ivory index plate. The balance is mounted on heavy black glass plate in fine polished mahogany glass case, with counterpoised front sliding frame. The case has glass top to admit light freely. Dimensions of case the same as No. 2558/3. Sensitive to  $\frac{1}{100}$  milligramme. Extreme sensitiveness  $\frac{1}{100}$  milligramme..... \$150 00
- \*2559/8—Balance, Heil's No. 100 new Short Beam Assay Balance. Same as No. 2559/7.** With hard metal skeleton beam..... 150 00
- \*2559/9—Balance, Heil's No. 100 new Short Beam Assay Balance. Same as No. 2559/7.** The beam hangers, needle and pans are made of pure aluminium, and all other metal parts are gold plated..... 166 65



2559/7 to 2559/9



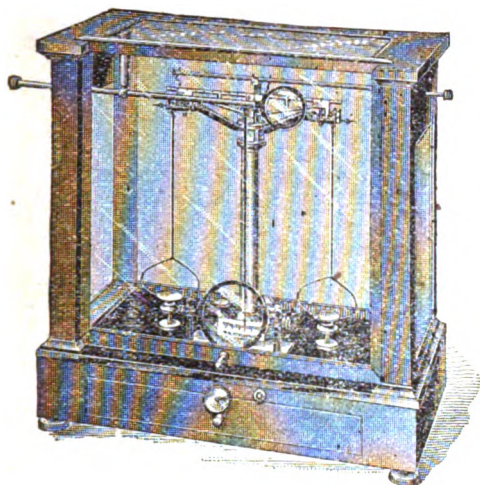
2581/2

- \*2581/2—Balance, Assay, Kohlbusch's No. 4, for a charge of 25 grammes** in each pan, needle deviates 20 divisions for 1 milligramme, aluminium hangings, with arrangement for rider.....

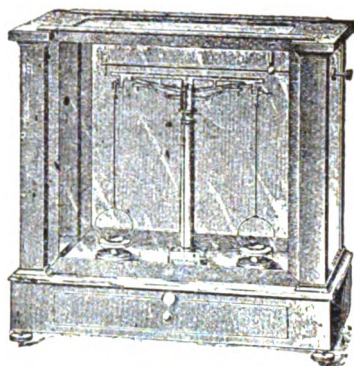
65 00

REMEMBER OUR DISCOUNT.

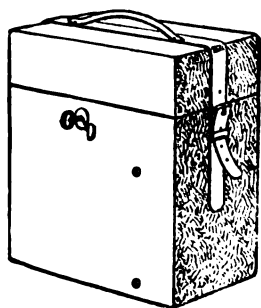
- \*2581/3—**Balance, Assay**, Kohlbusch's No. A, with aluminium Short Beam, divided in  $\frac{1}{100}$  milligrammes, for a charge of 30 grammes in each pan, sensitive to  $\frac{1}{100}$  milligramme. Rider has clean sweep across the beam. Bearings are agate planes with agate knives. No steel used in the construction. Most approved beam and pan arrest. Case has glass top to admit light freely. Entire scale is fastened on plate glass. With aluminium hangings ..... \$130 00
- \*2581/4—**Balance, Assay**, Kohlbusch's No. A1, with aluminium short beam, divided  $\frac{1}{100}$  milligrammes. Rider has sweep across the beam. Heavily plated with platinum. Agate knife edges and planes, improved beam and pan arrests. The entire scale is fastened on plate glass. Supplied with magnifying glasses to read divisions on beam and indicator. Adjusted to the highest attainable sensitiveness. Hangings all aluminium ..... 130 00



2581/4



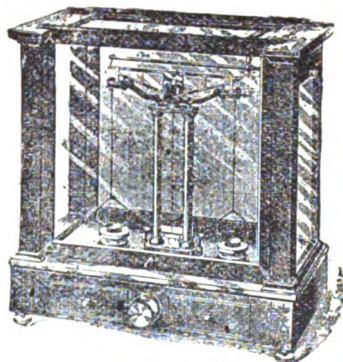
2581/8



2582



2582



2581/3

- \*2581/8—**Balance, Assay**, Kohlbusch's No. AA. Has aluminium beam divided in  $\frac{1}{100}$  milligrammes. Rider has clean sweep across the beam. All bearings agate, in handsome glass case with glass top to admit light freely, entirely fastened on glass. With improved pan and beam arrest. Sensitiveness  $\frac{1}{100}$  milligramme. .... 100 00
- \*\*2582—**Balance, Assay**, Kohlbusch's portable No. 5 for traveling. Improved with new attachment to keep beam in place which does not need to be removed when traveling and can be set up in working order in ten seconds. Rider arrangement, aluminium hangings. Needle deviates 20 divisions for 1 milligramme. Full set of Platinum weights from 1 gramme to  $\frac{1}{10}$  milligramme and rider. All bearings are of agate. Complete with light outside case and handled strap for carrying ..... 75 00

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



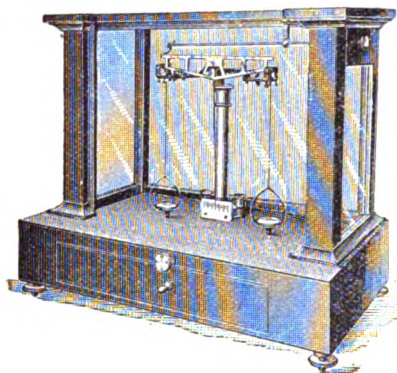
\*2582/1—**Balance, Assay, Kohlbusch's 1901.** The 1901 Assay Balance has aluminium short beam and hangings; all bearings agate. Rider has clean sweep across the beam, which is divided in 100 parts, 50 on each side. Heavily plated with platinum and non-corrosive throughout. Sensitive to  $\frac{1}{800}$  milligramme. Improved full beam arrest, all bearings lifted from knives when at rest. Polished mahogany case, 30.5 cm. high by 31.75 cm. wide. The price includes a set of specially adjusted weights, 1 grm. to  $\frac{1}{10}$  mgrm., and one each  $\frac{1}{4}$  and 1 mgr. Riders

Entirely fitted on Plate Glass

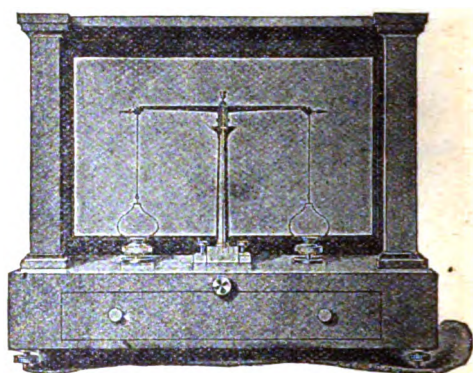
With magnifier for beam and indicator **\$16 00 extra.**

\$100 00

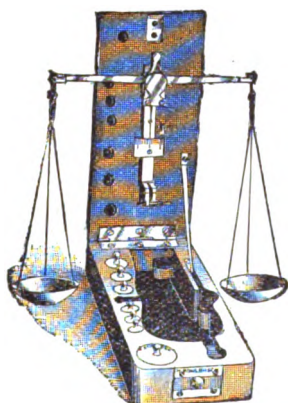
110 00



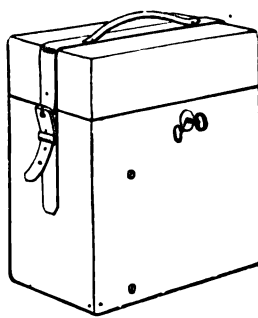
2582/1



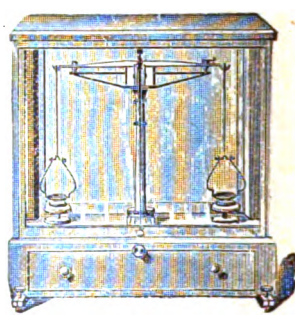
2585



2584



2590



2590

REMEMBER OUR DISCOUNT.

\*2584—**Balance, Assay, Pocket Assay Balance** for traveling. When closed up, measures 150 mm long, 70 mm wide and 30 mm high. Is raised and lowered by means of drop lever. Including weights, 10 grammes down to 1 mgrm, neatly fitted in box as shown in cut. Shows 4 divisions for 1 mgrm

18 00

\*2585—**Balance, Assay, Troemner's No. 1, fig. 131,** in fine French polished mahogany case, and sliding door. Beam of Aluminium. All bearings of Agate. Needle deviates 20 full divisions on ivory scale for 1 mgrm

55 00

65 00

With Rider Arrangement

\*2590—**Balance, Assay, Troemner's Improved Portable, for traveling, fig. 132.** Needle indicates 30 divisions for 1 mgrm. All bearings of Agate. In a mahogany case, with counterpoised sliding door. Beam and needle not disturbed when packed up. Balance can be instantly taken apart. Outside measurement 24 cm. long, 25 cm. high, 10 cm. deep. Total weight  $2\frac{1}{4}$  kilos. It is provided with **Rider Apparatus complete.** Beam divided into  $\frac{1}{5}$ ths. The balance packs away in a light outside box, secured with a strong leather strap. With set of weights 1 platinum grm. to  $\frac{1}{10}$  mgrm

70 00

**\*2595—Balance, Assay, Troemner's No. 2, fig. 133,** of the finest construction, arranged with rider apparatus, beam being

divided into  $\frac{1}{10}$  mgrm.

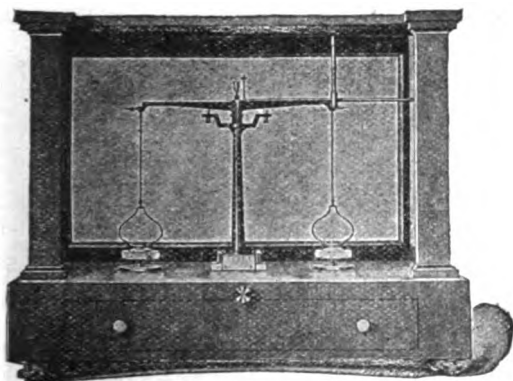
All bearings of Agate.

**Beam is made of**

**aluminium.** Needle

deviates 20 full divisions

for 1 mgrm..... \$ 80 00



2595

**\*2600—Balance, Assay, Troemner's No. 3, fig. 134.** In use at the U. S. Assay Offices at New York, St. Louis, and the U. S. Mints at

New Orleans, Philadelphia, etc., etc. Of great

sensibility; the needle indi-

cates 50 full divisions for 1

milligramme. All bear-

ings of Agate. **Open**

**beam of pure alumi-**

**nium,** graduated in  $\frac{1}{10}$ ths.

Has new improved arrest

for riders; mahogany case

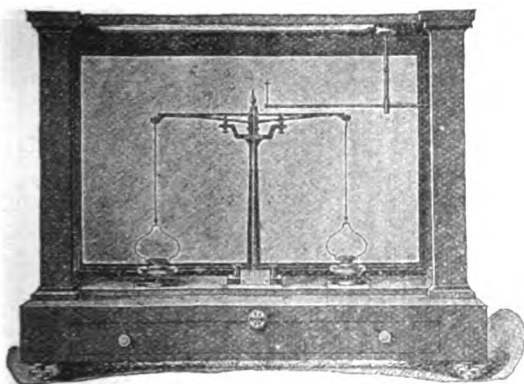
with glass top; and bottom

of heavy plate-glass; Bal-

ance is sensible to  $\frac{1}{100}$

milligramme .....

95 00



2600

**\*2601—Balance, Assay, Troemner's No. 5 (new), fig. 130.** An extra fine Balance, of the very finest and most delicate construction.

**Beam and its hang-**

**ings of pure alumi-**

**nium,** all bearings of

Agate, with agate knives;

has double column, with

improved eccentric lift,

working smooth and regu-

lar, releasing the pans first,

then the beam, by the one

operation; both arms of

beam are graduated into

equal parts; glass case of

the finest finish, and is

large and roomy; has glass

top to admit light freely;

bottom of case is ver y

heavy plate-glass; the Bal-

ance has the very highest

attainable sensibility, the

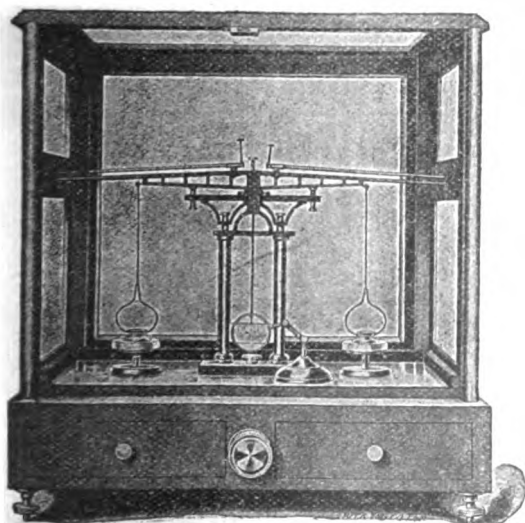
needle indicating 100 divi-

sions for 1 milligramme,

showing a sensibility of

$\frac{1}{100}$  milligramme.....

175 00

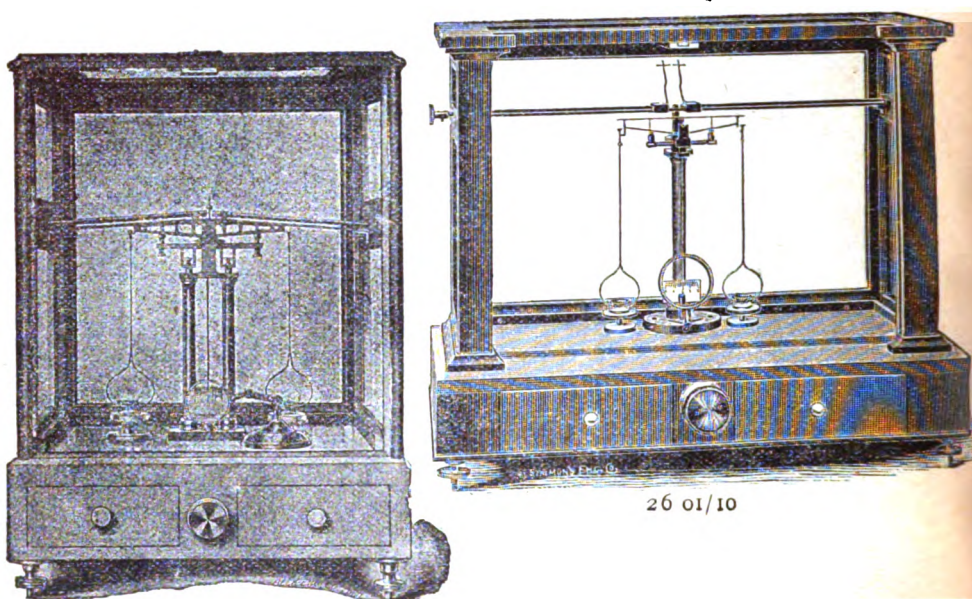


2601

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3000 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*2601/1—Balance, Assay, Troemner's No. 8 (new) Short Arm, (fig. 128). Same style and form as No. 2601 except it is a "short arm"; the beam is 15 cm. long; sensibility  $\frac{1}{100}$  milligramme ..... \$165 00



2601/1

26 01/10

- \*2601/10—Balance, Assay; No. 1 Special Button Balance, Ainsworth's. Sensitiveness  $\frac{1}{100}$  milligramme. 12.7cm. Beam. This balance was designed to meet the demand of assayers and smelters for a more accurate and rapid balance than has heretofore been produced. The beam is of brass, especially mixed to my formula, 12.7 cm. long, gilded, and with fifty divisions each side of the center; being unobstructed on top, the rider can be placed anywhere from the 0 division, at the center of the beam, to the last division, which is directly over the end edge and represents the full milligramme with a one-milligramme rider. The beam is so constructed and the mass so distributed throughout the beam, pointer and hangers that the balance will remain in perfect adjustment throughout a range in temperature of from 32 degrees to 120 degrees Fahrenheit, (a record unequaled by any other make of balance). The beam can be adjusted to weigh from 1-100 to 1-400 milligramme, at the option of the purchaser, but is, unless otherwise ordered, adjusted to 1-200 milligramme, at which sensibility it will weigh very rapidly and accurately.

The action of this balance is perfect; upon turning the thumb-piece, the pans first and the yokes supporting the beam, afterward, the beam dropping less than  $\frac{1}{10}$  mm. This slight drop allows the beam to come down without the slightest jar or vibration and thus increasing the speed at which the balance can be operated.

A reading glass for reading the index is furnished which can be turned to one side when not in use.

All metal work is lacquered in the best possible manner and the balance enclosed in a French polished mahogany case, with counter-poised sliding door and plate glass sub-base; has all the latest improvements, including the new style adjusting fly, skeleton hangers, and rider rod-lock; no expense being spared to make this balance the best to be obtained at any price.

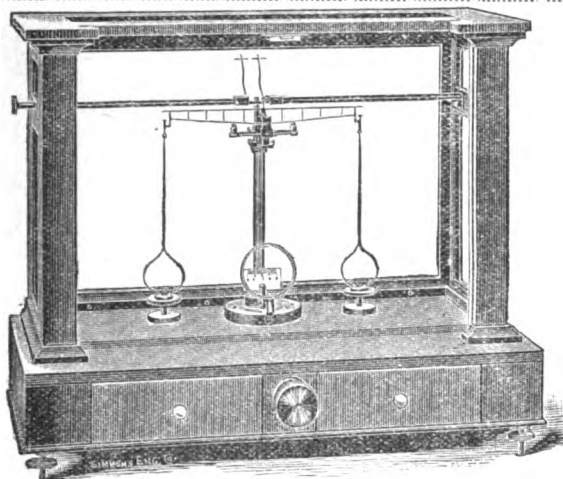
For weighing to 1-200 milligramme and finer,  $\frac{1}{2}$  milligramme riders are recommended for use on this balance. One-milligramme riders are furnished with each balance.

Dimensions of case, 50.8 cm. long, 43 cm. high, 25.4 cm. deep. Weight, packed for shipment, 20 Kilos. Price.....

250 00

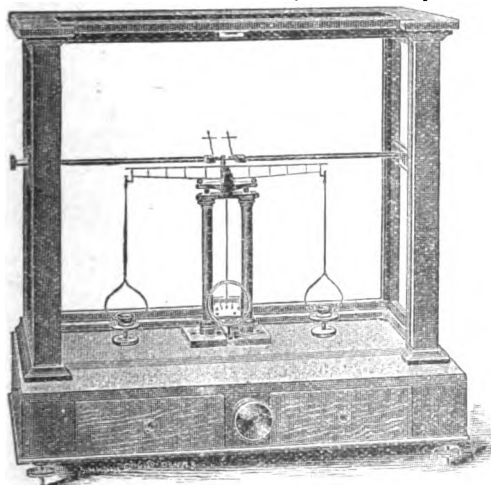


**2601/11—Balance, Assay; No. 1 Button Balance, Ainsworth's. Sensitiveness  $\frac{1}{100}$  to  $\frac{1}{1000}$  Milligramme. 12.7 cm. Beam.** This balance is similar in all respects to the No. 1 Special, except that the adjustments of the beam are not made with the extreme care that is taken with the No. 1 Special beam, but in sensibility, rapidity, stability of adjustment, etc., it is superior to any balance on the market at the price. One-milligramme riders furnished with each balance. Price ..... \$200 00



2601/14

**\*2601/14—Balance, Assay; No. 1 Special Button Balance, Ainsworth's. Sensitiveness  $\frac{1}{100}$  Milligramme. 20.3 cm. Beam.** The construction of this balance is the same throughout as the No. 1 Special with 12.7 cm. beam and is just as sensitive but not quite so rapid because of the difference in length of the beam, ( 7.6 cm ). Some assayers prefer it, however, to the shorter beam. The beam and its adjustments receive the same attention as the No. 1 Special with 12.7 cm. beam.



2601/18

**\*2601/18—Balance, Assay; No. 043 Button Balance, Ainsworth's. 25.4 cm. Beam. Sensitiveness  $\frac{1}{100}$  Milligramme.** This is a double column button balance with fall-away bearings and an improved action that is not affected by any possible warping of the wood. The beam is 25.4 cm. long, gilded, straight on top and with fifty divisions each side of the center; the adjusting device being back of the beam, the rider can be placed anywhere on the beam from the 0 point at the center to the last division, which is directly over the end edge and represents one milligramme with a one-milligramme rider. Has agate knife edges and bearings, double rider apparatus and reading glass for index. The case is of thoroughly seasoned mahogany. French polished and with counterpoised sliding door and plate glass sub-base. One-milligramme riders furnished with each balance.

Dimensions of case, 53.3 cm. long, 53 3 cm. high, 30.5 cm. deep. Weight, packed for shipment, 27 Kilos. Price.....

175 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

Has all the latest improvements. One-milligramme riders furnished with each balance.

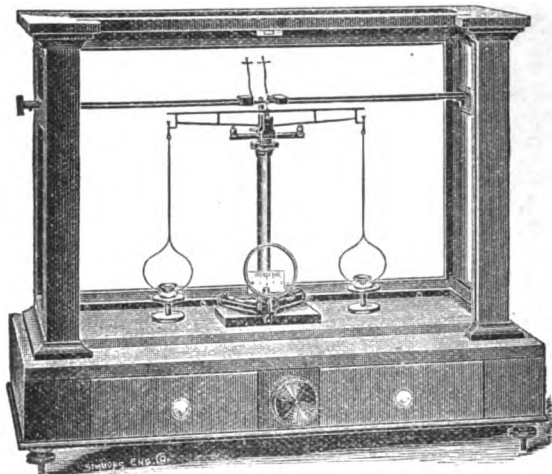
Dimensions of case, 50.8 cm. long, 43 cm. high, 25 4 cm. deep. Weight, packed for shipment, 20 Kilos. Price....

250 00

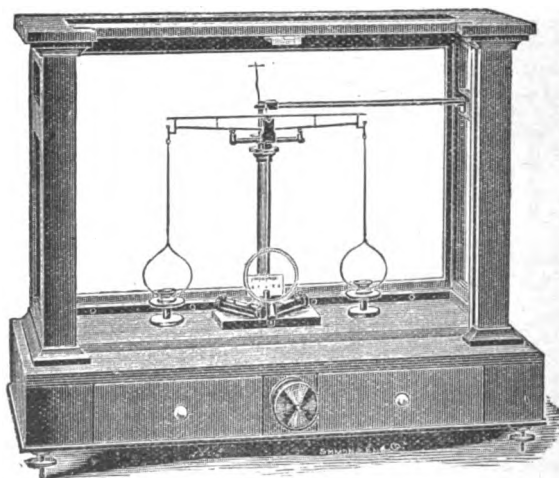
**\*2601/19—Balance, Assay; No. 044 Button Balance, Ainsworth's. 20.3 cm. Beam. Sensitiveness  $\frac{1}{100}$  Milligramme.** This is a single column button balance with double rider apparatus, 20.3 cm. beam and reading glass for index. The beam is specially constructed to withstand a heavy load and still maintain the mass distribution, insuring stability of adjustment for varying temperatures. It is especially recommended for rapid silver weighings. In French polished mahogany case with counterpoised sliding door and plate glass sub-base. One-milligramme riders furnished with each balance.

Dimensions of case, 50.3 cm. long, 43 cm. high, 25.4 cm. deep.

Weight, packed for shipment, 20 Kilos. Price ..... \$125 00



2601/19



2601/20

**\*2601/20—Balance, Assay; No. 045 Silver Button Balance, Ainsworth's. 20.3 cm. Beam. Sensitiveness  $\frac{1}{50}$  Milligramme.**

A single column button balance with 20.3 cm. beam and single rider apparatus. The beam is graduated into fiftieths and the rider can be placed anywhere from the 0 division to the last, which represents the full milligramme with a one-milligramme rider. Agate bearings and edges, and similar in all respects to the No. 044. French polished mahogany case with counterpoised sliding door and plate glass sub-base. One-milligramme riders furnished with each balance.

Dimensions of case, 50.3 cm. long, 43 cm. high, 25.4 cm. deep.

Weight, packed for shipment, 20 kilos.

Price ..... 100 00

REMEMBER OUR DISCOUNT.

**\*2601/21—Balance, Assay; No. 2 Button Balance, Ainsworth's.  
10.15 cm. Beam. Sensitiveness  $\frac{1}{100}$  Milligramme.**

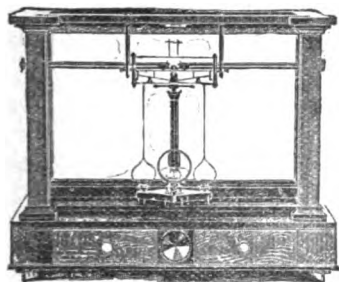
This balance, having a beam but 10.15 cm. long, is very rapid and has all the latest improvements, including reading-glass for beam, improved rider apparatus, fall-away pan-rests and plate-glass sub-base, rider rod-locks and skeleton hangers.

The beam has 50 divisions each side of the center reading to  $\frac{1}{100}$  milligramme with a 1-milligramme rider or to  $\frac{1}{100}$  milligramme with a  $\frac{1}{2}$ -milligramme rider, finer readings being taken by subdividing the divisions with the eye. It is unobstructed on the top and the rider can be placed at any point from the 0 at the center to the last division at either end, which is directly over the end edge and represents the full weight of the rider used.

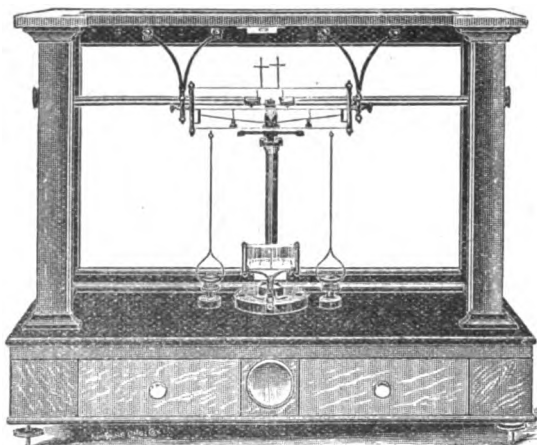
All edges and bearings are of agate. The base forms the sliding bearing for the center-rod and pan-rests and their alignment will remain perfect regardless of the shrinkage of the wood and the entire mechanism can be taken out by taking out the screw in the center rider bar support and the two base screws.

Has French polished mahogany case with counterpoised sliding door, all of thoroughly seasoned lumber. Dimensions, 50.8x43x25.4 cm.

In the engraving the counterpoised sliding door has been removed to better illustrate the balance. Price ..... \$225 00



2601/21



2601/22

**APPROXIMATE EQUIVALENTS:**  
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.;  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 gm.; 1 pound = 450 gm.

**\*2601/22—Balance, Assay; No. 0 Precision Balance, Ainsworth's.  
12.7 cm. Beam. Sensitiveness  $\frac{1}{100}$  Milligramme.**







For particularly accurate weighings, such as control and umpire assays, and for scientific laboratories where the utmost accuracy is required, it being by far the most accurate balance ever produced.

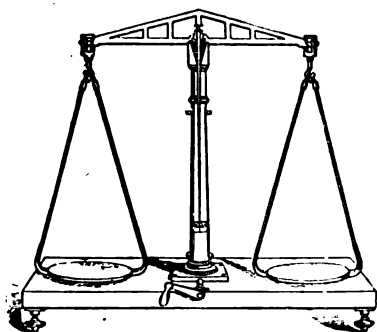
The beam is of a special alloy, with 50 divisions each side of the center and reading to  $\frac{1}{100}$  milligramme with 1 milligramme rider, or to  $\frac{1}{100}$  milligramme with a  $\frac{1}{2}$  milligramme rider, finer readings being taken by subdividing the divisions with the eye, the beam being provided with a specially ground reading glass. The beam is unobstructed on the top, and a rider can be placed at any point from 0 at the center to the last division which is directly over the end edge and represents the full weight of the rider used.

All bearings and edges, as well as all points of contact with the beam and hangers, are of agate. Has fall-away pan rests, rider rod locks and skeleton hangers. It has improved rider apparatus and star-wheel adjustment; all metal work is gold plated; a plate-glass sub-base covers the entire top of base and the case is of thoroughly seasoned mahogany throughout, and as nearly dust proof as it can be made. Dimensions, 50.8x43x25.4 cm.

In the engraving the counterpoised sliding door has been removed to better illustrate the balance. Price ..... 300 00

**Balances, Analytical and Assay, manufactured by L. Oertling, E. Mentz, Albert Rueprecht, Hermann Fleischner, F. Sartorius, C. F. Betting and G. Kern & Sohn, will be imported to order at lowest rates.**

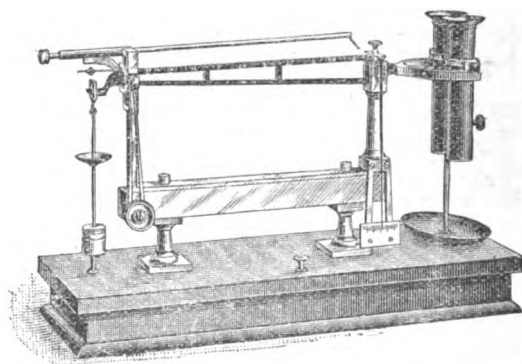
	2602—Balance, Bullion and Specie Scale, Heil's No. 29, carrying 16 kilos in each pan. Sensitive to 60 mgrm. with that charge. All bearings planes, with new improved arrangements for arrest of pans and beam, provided with set screws and level .....	\$165 00
	2602/1- Ditto, ditto, Heil's No. 30, in glass case. Sensitive to 30 mgrm .....	250 00
	2603—Ditto, ditto, Heil's No. 31, for 62 kilos in each pan. Sensitive to 120 mgrm. with that charge .....	210 00
	2603/1—Ditto, ditto, Heil's No. 32, in glass case. Sensitive to 60 mgrm .....	300 00
	2604—Ditto, ditto, Heil's No. 33, for 156 kilos in each pan. Sensitive to 120 mgrm. with that charge .....	600 00
	2604/1--Ditto, ditto, Heil's No. 34, in French polished mahogany glass case, with counterpoised front sliding frame. Sensitive to 60 mgrm. with that charge .....	750 00



2615



2617



2619/1

\*2615—Balance, Bullion Balance, Fig. 170, Troemner's. Balance has brass beam, pans and bows; improved raising apparatus, provided with glass level and leveling feet; adjusting screws on beam, etc. A full set of weights included; large weights are of iron, bronzed, those from 50 oz. and down are of brass, a walnut block.

Capacity.	Weights.	Price.
16 kilos.	500 ounces.	\$95 00
32 "	1000 "	120 00
47 "	1500 "	150 00

2616—Balance, Bullion Balance, Fig. 172, Troemner's. Balance has an iron beam; has eccentric lift; adjusting screws on beam; brass pans; price includes a full set of weights.

Capacity, 47 kilos; weights, 1500 ounces

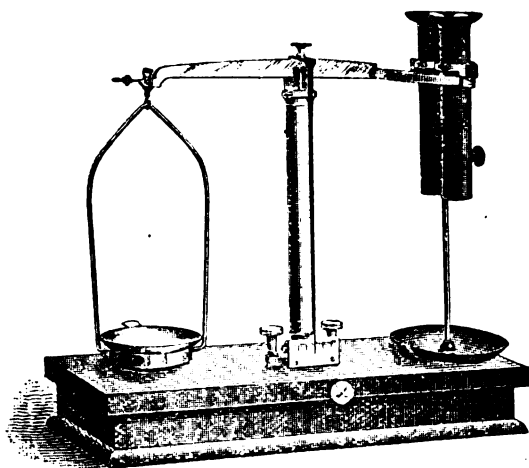
100 00

\*2617—Balance, Bullion Balance, Fig. 173, Troemner's. Balance will carry 62 kilos in each pan; open brass beam, pans and arches also of brass; has the complex levers to arrest the beam and its hangings; platform is of iron, neatly japanned; has adjusting screws on beam; glass level and leveling feet; sensible to 60 mgrm; price does not include weights .....

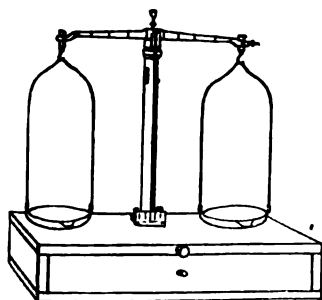
210 00

REMEMBER OUR DISCOUNT.

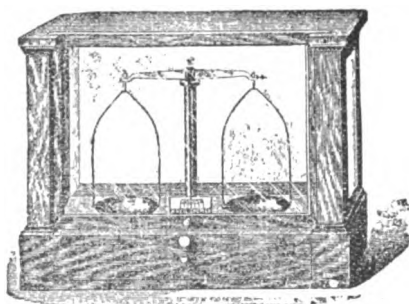
2618—Balance, Bullion Balance, Fig. 176, Troemner's. Same as No. 2617 in all respects; capacity is 16 kilos in each pan, and sensible to 60 mgrm.; price without weights	\$160 00
2619—Balance, Candle, No. 1, similar to No. 2619/1, on metal base, with improved beam and pan arrests, rider arrangement, double candle holder, horizontal adjustment	120 00
*2619/1—Balance, Candle, No. 2, with beam and pan arrests, rider arrangement, double candle holder, on box (Illustr. p. 106)	80 00
*2619/2—Balance, Candle, No. 3, plain, with eccentric lift, on box	40 00
<del>2619</del> *2624—Balance, Heil's No. 14. On French Polished Box with drawer, eccentric for lifting bows, and movable pans. Can be charged up to 60 grms. in each pan. Sensitive to 1 mgrm	11 00
With set screws and level	14 00
<del>2619</del> *2624/2—Balance, Heil's No. 16. In glass case, with counterpoised front sliding frame. Sensitive to 1 mgrm	22 00
With set screws and level	25 00



2619/2









2624 and 2624/3



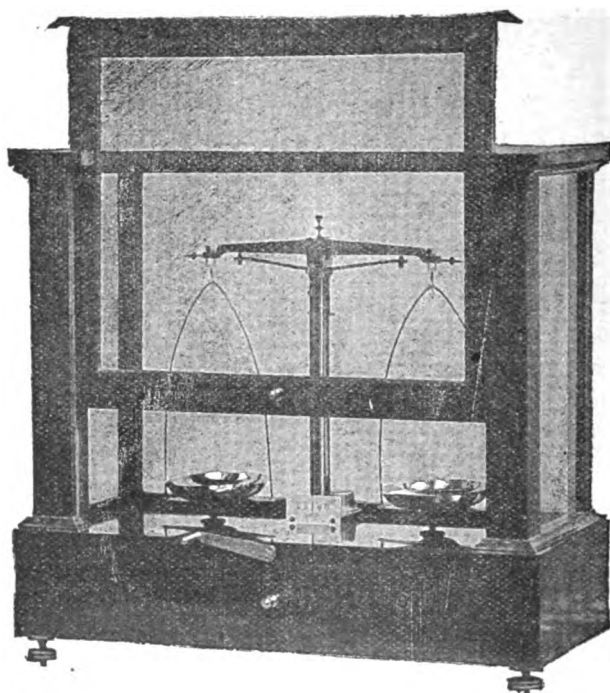
2624/2 &amp; 4

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.





<del>2619</del> *2624/3—Balance, Heil's No. 17. For 160 grms. in each pan, on French Polished Box, with drawer, eccentric for lifting bows, movable pans. Sensitive to 2 mgrms	15 00
With set screws and level	18 00
<del>2619</del> *2624/4—Balance, Heil's No. 18. Ditto, in glass case, with counterpoised sliding frame, for a charge up to 160 grammes. Sensitive to 1 mgrm	26 00
With set screws and level	29 00
<del>2619</del> *2624/5—Balance, Heil's No. 18A. Assayer's Pulp Balance. This Balance is constructed somewhat similar to Balance No. 18. The beam is of solid brass, with agate knife edges, and all bearings are of agate. The Balance has arm supports for beam and pan arrest. The pans are lipped form, and are 8 25 cm. in diameter, large enough to hold 1 A. T. of assay flour. Sensitive to 1/4 milligram (Illustr. p. 108)	45 00

	2624/6— <b>Balance, Heil's No. 19.</b> For 300 grms. in each pan, on French Polished Box with drawer, eccentric for lifting bows, set screws and level. Sensitive to 6 mgrms .....	\$ 22 00
	2624/7— <b>Balance, Heil's No. 20.</b> Ditto, for 300 grms. in glass case. Sensitive to 2 mgrms .....	35 00
	2624/8— <b>Balance, Heil's No. 21.</b> For 600 grms. in each pan, on French Polished Box with drawer, eccentric for lifting bows, set screws and level. Sensitive to 6 mgrms .....	27 00
	2624/9— <b>Balance, Heil's No. 22.</b> Ditto, for 600 grms. in glass case. Sensitive to 3 mgrms .....	42 00
	2624/10— <b>Balance, Heil's No. 23.</b> Same for 1½ kilos in each pan. Sensitive to 30 mgrms. with that charge .....	35 00
	2624/11— <b>Balance, Heil's No. 24.</b> Ditto, for 1½ kilos, in glass case. Sensitive to 15 mgrms .....	55 00

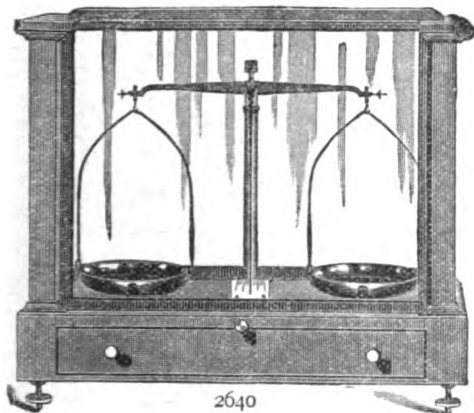
REMEMBER OUR DISCOUNT.



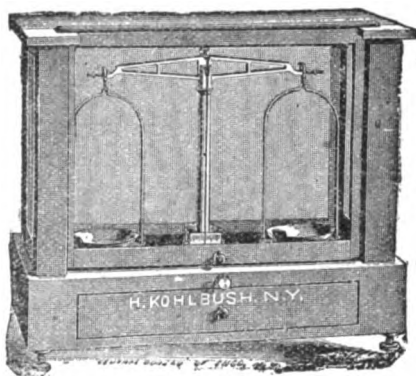
2624/5

	2624/12— <b>Balance, Heil's No. 25.</b> Same for 3 kilos in each pan. Sensitive to 30 mgrms. with that charge .....	49 50
	2624/13— <b>Balance, Heil's No. 26.</b> Ditto, for 3 kilos, in glass case. Sensitive to 15 mgrms .....	76 00
	2624/14— <b>Balance, Heil's No. 27.</b> Same for 10 kilos in each pan. Sensitive to 60 mgrm. with that charge .....	66 00
	2624/15— <b>Balance, Heil's No. 28.</b> Ditto, for 10 kilos, in glass case .....	100 00
*2640— <b>Balance, in glass case, Troemner's, fig. 25, in polished mahogany case, with counterpoised sliding door, leveling feet and glass level, adjusting screws on the beam, movable nickel pans. Of the finest finish. (Illustr. p. 109)</b>		
No.	Beam.	Diameter of pans.
1	35 cm.	15 cm.
2	25 cm.	10 cm.
3	21 cm.	7.5 cm.
	Capacity.	
	1.5 Kilos .....	45 00
	600 grms .....	37 00
	300 grms .....	30 00

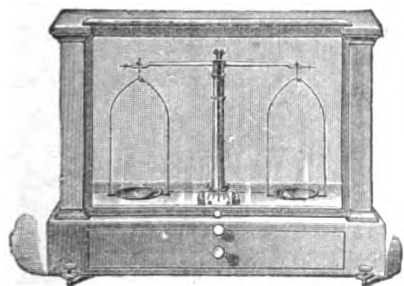
- \*2643—**Balance, Pulp or Ore**, Kohlbush's No. F. In mahogany glass case, slide front, counterpoised, set screws and level, adjusting screws on ends of beam, 7.5 cm. nickel-plated pans; sensitive to  $\frac{1}{2}$  mgrm..... \$ 29 00
- 2643/1—**Ditto, ditto, with Agate Bearings** ..... 34 80
- 2643/10—**Balance, Pulp or Ore, No. 054, Ainsworth's. Sensitive-ness  $\frac{1}{4}$  Milligramme.** This is an accurate pulp or ore balance, capacity 300 grams in each pan. Pans 63.5 mm. in diameter, but can be furnished 80 mm. in diameter to order. French polished mahogany case with counterpoised sliding door, level and leveling screws. The beam, hangers, pans, etc., pack in the drawer for shipment.
- Dimensions of case, 43 cm. long, 38 cm. high, 20.3 cm. deep.  
Weight, packed for shipment, 14 Kilos. Price..... 30 00
- 2643/13—**Balance, Pulp or Ore, No. 055, Ainsworth's. Sensitive-ness  $\frac{1}{2}$  Milligramme.** This is an open pulp or ore balance on French polished mahogany base and similar in all respects to the No. 054. The column, hangers, beam, etc., pack in the drawer for convenience in shipping.
- Dimensions of case, 30.5 cm. long, 7.6 cm. high, 15.2 cm. deep.  
Weight, packed for shipment, 1.2 Kilos. Price..... 15 00



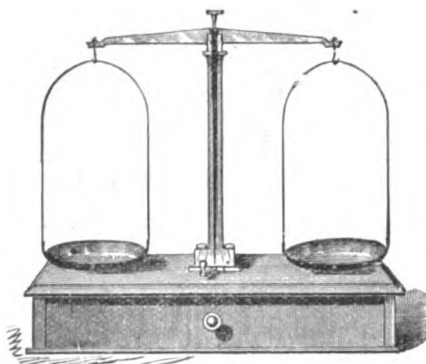
2640



2643



2644



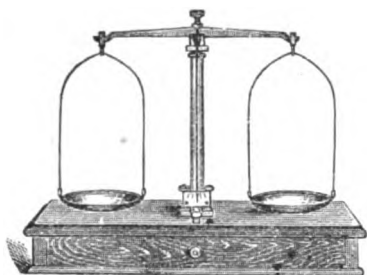
2645

- \*2644—**Balance, Analytical; Troemner's Pulp Scale, Fig. 26.** This balance is in general use in mining sections for weighing pulp, etc., etc. In a French polished mahogany case, with counterpoised sliding door; has movable nickel pans; adjusting screws on the beam; eccentric lift; case is provided with glass level and leveling feet. Scale is sensible to 2 mgrms; capacity 60 grms. in each pan..... 27 00
- \*2645—**Balance, Analytical Scale, Troemner's, Fig. 22,** on fine polished mahogany box with drawer. Lacquered beam with box ends, adjusting screws, movable nickel-plated pans, ivory indicator, improved lever. Sensible to 2 mgrms.
- | No. | Length of beam. | Diameter of pans. | Capacity.     |       |
|-----|-----------------|-------------------|---------------|-------|
| 1   | 35 cm.          | 15 cm.            | 750 grms..... | 24 00 |
| 2   | 25 cm.          | 10 cm.            | 300 grms..... | 18 00 |
| 3   | 21 cm.          | 7.5 cm.           | 150 grms..... | 15 00 |

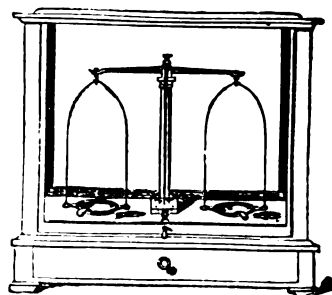
APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 7 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

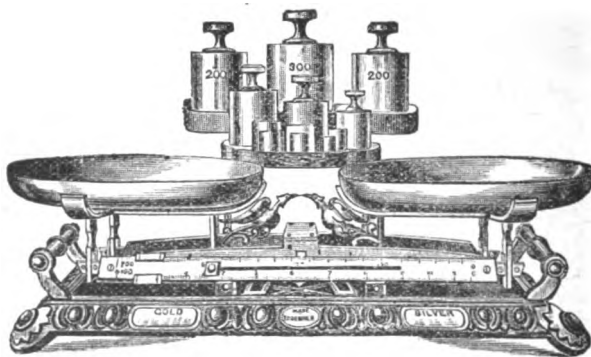
- \*2646—Balance, Gold Coin Scale, Fig. 184, Troemner's.** For testing single pieces of coin—to ascertain if counterfeit, or if below the least current weight. A set of coin weights from Twenty Dollar piece down to One Dollar piece, adjusted to the least current standard, are included. Also a set of grain weights are provided; by the use of these the exact market value of the coin can be ascertained. The mode of doing so is as follows: Place, for instance, a ten dollar gold piece in one pan and the ten dollar weight in the other; if the coin is of sufficient weight to make the scale balance, it is worth, and will be received by the Government for, its face value. Should it, on the other hand, be light, it has only a bullion value. In order to ascertain this value, add grain weights to the coin until the scale balances; if it requires say 25 grains to do this, then the said coin is worth only nine dollars, inasmuch as a gold dollar weighs 25.8 grs. With weights ..... \$ 18 00
- \*2646/1—Balance, Gold Coin Scale, Fig. 185, Troemner's.** Scale is specially designed for weighing single coins, to ascertain if counterfeit or if below the current standard. In a fine mahogany case, with door sliding upward. Price includes a full set of coin weights ..... 28 00



2646



2646/1



2648

**\*2648—Balance, Troemner's New Improved Specie Scale, Fig. 187.**

A new and improved specie scale, designed for banks, and bankers. The scale takes up but little room, and weighs with the greatest accuracy a single gold dollar up to a thousand dollars of silver at a single draft. It will verify the count, and give the actual value of abraded or the least current coin. It is provided with a full set of brass weights conveniently arranged, and a tare beam by which the amount of shortage is instantly ascertained, be it one dollar or twenty. The side beam has four graduations—for Gold, Trade dollars, Standard dollars, and subsidiary coin. On the platform of the scale are affixed two tables, one giving the weight of gold coin in drafts from \$5,000 to \$100, and the other gives the weight of silver in drafts of \$1,000 to \$50. To weigh a draft of coin we proceed as follows: Supposing we desire to weigh \$5,000 in gold, we look at the table and find the weight required is 268.75; we place the 268 ounces in the right-hand pan and slide the ounce poise A to 75; then put the coin in the left-hand pan. Should the coin weigh light, we slide the poise B along the beam until the scale balances. If this takes place with the poise at say 20, it signifies that the coin is that many dollars short. Complete with weights.....

90 00

REMEMBER OUR DISCOUNT.

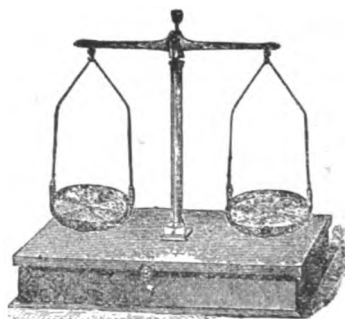


- \*2649—**Balance, Sealers' Adjusting Balance, Fig. 177, Troemner's.** Balance specially designed for sealers' use. Has the open truss beam with indicator pointing downward, leveling feet and glass level; has improved lever with adjusting screws on the beam; it is finished in the best manner and has the highest sensibility. It will adjust from a 20 Kilo weight down to 2 grms. \$ 95 00
- 2649/1—Ditto, ditto, same balance in a glass case, with a counterpoised sliding door 125 00
- \*2656—**Balance, Heil's No. 35 Diamond Balance,** in glass case, sliding frame, counterpoised, for charge up to 100 carats in each pan. Sensitive to  $\frac{1}{1000}$  carat with that charge. Provided with arrest for pans and beam, set of weights, 100 carat piece and down to  $\frac{1}{4}$  carat. Dimensions of case, 38 cm. long, 30 cm. high, 18 cm. deep..... 50 00
- \*2657—**Balance, Gold or Jewelers', Kohlbusch's,** all of brass, highly finished, of superb workmanship and lacquered to prevent tarnishing. Movable pans with improved lever for lifting, adjusting screws on end of beam. On polished walnut boxes, or glass case with drawer. Prices do not include weights.

No	Diam. of Pans.	Length of Beam.	Cap. in each Pan.	Length of Box.	Price.	In Glass Case.
0	9 cm.	18 cm.	250 grms.	30 cm.	\$ 10 80	20 00
1	10 cm.	20 cm.	500 grms.	34 cm.	13 00	22 20
2	11.5 cm.	23 cm.	950 grms.	38 cm.	15 15	26 65
3	14 cm.	25 cm.	1 5 Kilos.	44 cm.	17 30	31 10
4	17.8 cm.	30 cm.	2 Kilos.	50 cm.	21 65	37 75
5	19 cm.	38 cm.	2.3 Kilos.	60 cm.	27 20	44 45
6	25 cm.	45 cm.	3 Kilos.	on base.	43 30	71 50



2649



2657

APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

- \*2658—**Balance, Diamond, improved Pocket and Upright Diamond Scale combined,** Nos. 1 and 2. (Illustr. p. 112)

No. 1 measures when closed 127x58x29 mm.

No. 2 measures when closed 152x63x32 mm.

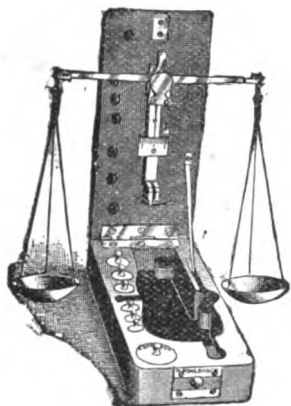
With full set of weights, fitted separately, 64 carat to  $\frac{1}{4}$ . For either size.....

15 00

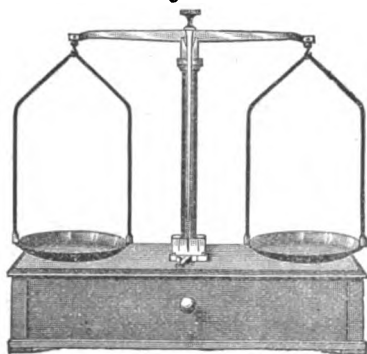
- \*2659—**Balance, Jewelers' Gold Scale, Fig. 139, Troemner's.** For jewelers, brokers, etc. Indicator pointing downward; on a polished walnut box, with drawer; very accurately adjusted; a set of Troy cup weights included. (Illustr. p. 112)

No.	Beam.	Diam. of Pans.	Weights.	
0	33 cm.	15 cm.	64 oz.	24 00
1	25 cm.	13 cm.	32 oz.	15 00
2	23 cm.	10 cm.	16 oz.	12 00
3	18 cm.	9 cm.	8 oz.	10 00
4	16.5 cm.	7.5 cm.	4 oz.	8 00

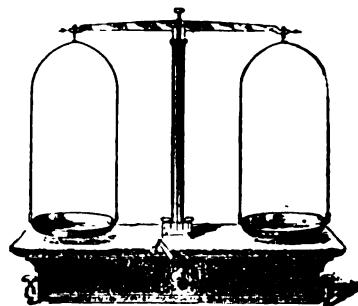
- \*2659/1—**Balance, Jewelers' Balance, Fig 135, Troemner's, No. 0.**  
Elegant balance, of the finest finish; on French polished mahogany box, with drawer; screw feet and level; capacity 3 Kilos in each pan; sensibility 15 mgrms.; pans are 18 cm. nickel-plated ..... \$ 45 00
- \*2659/2—Ditto, ditto, in a fine mahogany case, counterpoised sliding door..... 70 00
- \*2659/3—**Balance, Jewelers' Balance, Fig 135, Troemner's, No. 1.**  
Balance on mahogany box; has movable 15 cm. pans; sensible to 6 mgrms., capacity 900 grms. in each pan ..... 24 00
- \*2659/4—Ditto, ditto, **No. 2.** Has 10 cm. nickel pans; capacity 300 grms. in each pan; sensible to 3 mgrms ..... 18 00
- \*2659/5—Ditto, ditto, **No. 3.** Has 7.5 cm. nickel pans; capacity 150 grms in each pan; sensible to 3 mgrms ..... 15 00



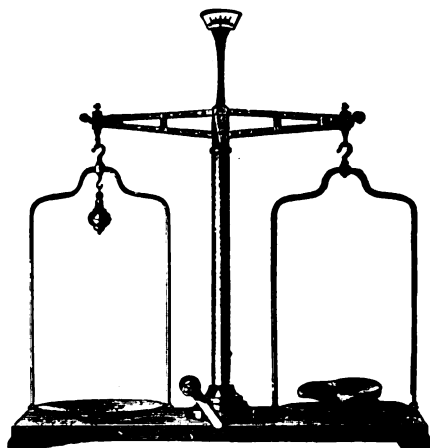
2658



2659



2659/1, 3, 4 &amp; 5



2659/6

- \*2659/6—**Balance, Manufacturing Jewelers' Balance, Fig. 238, Troemner's,** for weighing jewelry, silverware, bullion, etc. Price includes weights as quoted. This very popular and reliable balance is mounted on a walnut platform, and is well finished; has improved lever, extra pan for loose matter; balance is large and roomy, and is well adapted for use in the store or workshop.

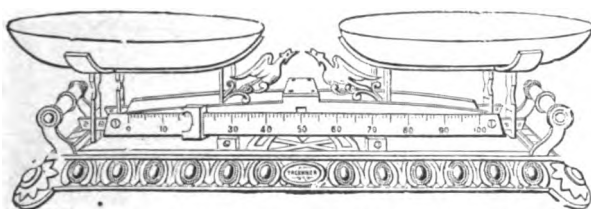
Length of Beam.	Pans.	Set of weights.	
60 cm.	30 cm.	200 oz.	90 00
45 cm.	25 cm.	100 oz.	55 00
40 cm.	23 cm.	64 oz.	45 00
35 cm.	20 cm.	32 oz.	35 00

- \*2659/7—**Balance, Silver Scale, Fig. 35, Troemner's,** a new and reliable scale, of large capacity, for weighing large or small amounts; solid silver or plated ware, or any bulky matter; has Agate bearings, heavy 35 cm. pans; with side beam on the front, which weighs to one ounce, and is divided into 100 equal divisions, each representing the 100th part of an ounce; this saves the use of weights smaller than an ounce; scale will carry 300 oz. in each pan, and is used by Tiffany & Co., Gorham Mfg. Co., and others. Without weights (Illustr. p. 113)

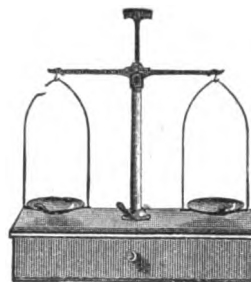
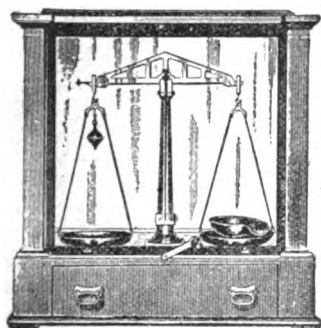
45 00

REMEMBER OUR DISCOUNT.

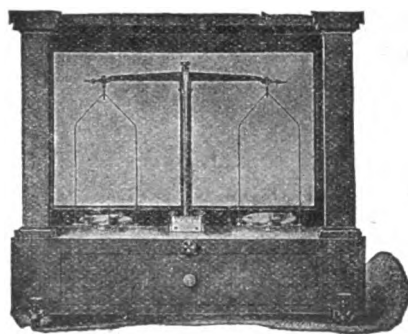
- \*2659/8—**Balance, Jewelers' Balance, Fig. 24, Troemner's.** Balance of the very finest finish, in French polished glass case; with counterpoised door, sliding upward; has open beam; 20 cm. nickel pans that are movable; capacity 6 Kilos, and sensible to 30 mgrms.; has extra pan for loose matter; inside measure of case is 89 cm. high, 76 cm. wide. Price includes a full set of weights, 50 oz. to 1 grain. These are neatly fitted in the drawer of case ..... \$ 97 50
- 2659/9—Ditto, ditto, but with weights 100 oz. and down (200 oz. in all)..... 107 50
- \*2659/11—**Balance, Diamond Scale, Fig. 118, Troemner's,** in fine mahogany case, with counterpoised sliding door; has glass level and leveling feet; pans are movable, nickel-plated; capacity 100 carat, sensible to  $\frac{1}{10}$  carat; price includes a full set of weights, 100 carat and down to  $\frac{1}{10}$  carat, in a mahogany, velvet-lined box. In use by James E. Caldwell & Co.; Baily, Banks & Biddle, Simons Bros. & Co., S. Muhr's Sons & Co., Victor Bishop & Co., N. Y. .... 32 00



2659/7


 2659/15 }  
 2659/16 }  
 2660 }


2659/8



2659/11

APPROXIMATE EQUIVALENTS:

 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

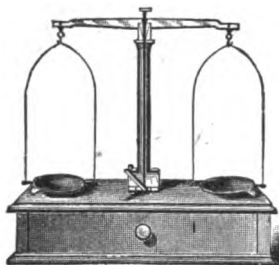
- \*2659/15—**Balance, Army Prescription, nickel-plated,** on polished oak box. Scale packs away in drawer of box. Well adapted for physicians' offices. Beam 15 cm.; pans 7.5 cm. .... 3 00
- \*2659/16—Ditto, ditto, with set of weights from 2 drachms to  $\frac{1}{2}$  grain..... 3 25
- \*2660—**Balance, Army Prescription Scale, Fig. 9, Troemner's,** on polished walnut box. Scale packs away in drawer of box. A well finished and reliable scale, well adapted for physicians' offices. Price includes a full set of weights.
- | No. | Beam.    | Pans.  |      |
|-----|----------|--------|------|
| 0   | 20 cm.   | 70 mm. | 6 00 |
| 1   | 18 cm.   | 57 mm. | 5 00 |
| 2   | 14.5 cm. | 50 mm. | 3 50 |
- \*2660/2—**Balance, Prescription Scale, Fig. 10, Troemner's.** Scale has indicator pointing downward; slide attachment on needle; by showing this to the right or left, scale is quickly balanced; has nickel-plated pans; entire scale lacquered, on a polished walnut box with drawer; total height, 29 cm.; a full set of weights included. Diameter of pans, 7 cm.; Weights, 2 dr. to  $\frac{1}{2}$  gr (Illustr. p. 114)..... 8 00

**\*2660/3—Balance, Prescription Scale, P. 36, Troemner's,** on marble base; improved raising apparatus; open beam, provided with an adjusting slide, which, if moved to the right or left, quickly balances the scale; entire scale heavily plated with nickel; a full set of weights included.

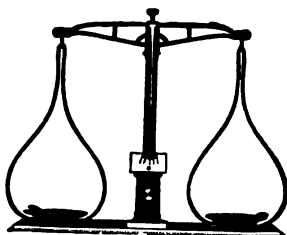
No.	Pans.		
1 Nickel-plated,	63 mm.	.....	\$ 9 00
2 Nickel-plated,	70 mm.	.....	10 50
3 Nickel-plated,	76 mm.	.....	12 00

**\*2660/4—Balance, Prescription Scale, P. 44, Troemner's.** Same scale as 2660/3, except that it is mounted on a marble top Eastlake box, with drawer. Scale provided with an adjusting slide on top of beam, which shoves to the right or left to balance the scale with. Entire scale is nickel-plated; full set of weights included.

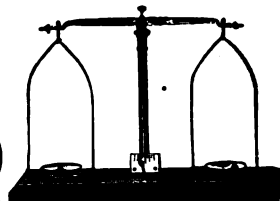
No.	Diameter of pans.		
1 Nickel-plated.	63 mm.	.....	10 50
2 Nickel-plated.	70 mm.	.....	12 00
3 Nickel-plated.	76 mm.	.....	14 00



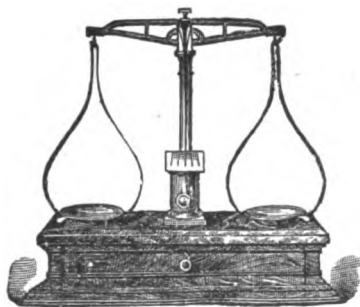
2660/2



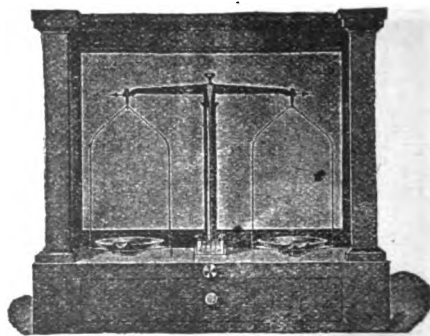
2660/3



2660/5



2660/4



2660/7 &amp; 8

**\*2660/5—Balance, Prescription Balance, P. 95, Troemner's.** Scale of the very finest construction. Entire scale is lacquered, which is very much better than nickel; pans are of solid silver. Beam has adjusting screws, by which the scale can be quickly balanced. Mounted on a genuine black Belgian marble base; sensible to  $\frac{1}{4}$  mgrm. This scale is specially adapted to fine weighing, such as poisons, etc. Diameter of pans,  $5\frac{1}{4}$  cm. (Solid Silver.) Sensibility,  $\frac{1}{4}$  mgrm. ....

20 00

**2660/6—Ditto, ditto, mounted in a mahogany glass case, with counterpoised sliding door** .....

27 00

With all bearings Agate, \$5 00 extra.

**\*2660/7—Balance, Prescription Balance, P. 63, Troemner's.** This balance is one of the best and most reliable that can be used on the prescription counter. For stability and endurance it has no superior. There is no other form of scale known to mechanics that will approach it for reliability and uniform accuracy. Mahogany case, counterpoised door, sliding upward; has solid nickel pans; has adjusting screw on beam to balance scale by; it is sensible to 1 mgrm.; it is one of the leading favorites. Diameter of pans, 7 cm. Beam 21.5 cm.

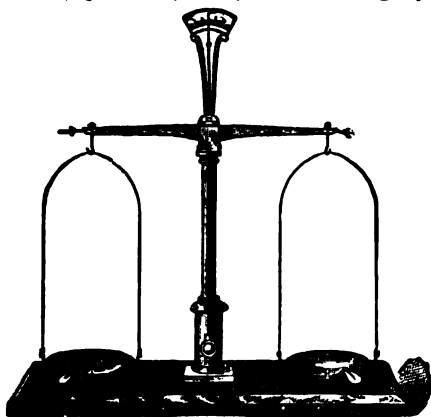
22 00

**\*2660/8—Ditto, ditto, provided with all Agate bearings** .....

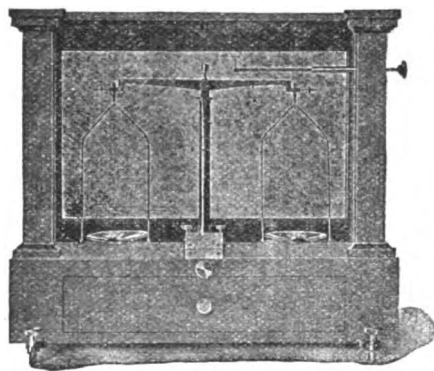
27 00

REMEMBER OUR DISCOUNT.

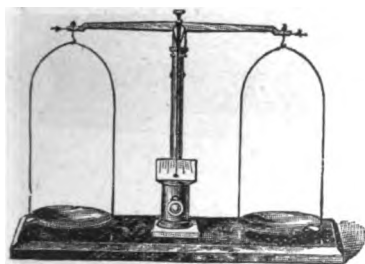
- \*2660/9—**Balance, Prescription Scale, P. 57, Troemner's.** Of very superior finish; same general style as the 2660/5, but is much larger and carries a heavier load; can be safely loaded with 60 grms.; has 7.5 cm. solid nickel pans; entire scale lacquered; adjusting screws on the beam; Tennessee marble base; sensible to 1 mgrm. \$ 18 00
- 2660/11—Ditto, ditto, all nickel-plated, with a glass level attached ..... 22 00  
With all bearings Agate, \$5 00 extra.
- \*2660/12—**Balance, Agate Prescription Balance, P. 88, Troemner's,** extra large size. Scale has indicator pointing upward, and weighs rapidly. Scale is full jeweled, having all "Agate" bearings, making them proof against rust or corrosion. Beam is plated with gold, all the other parts nickel, to save cleaning; has adjusting screws on the beam; sensible to  $\frac{1}{4}$  mgrm.; scale is very roomy and comfortable to work with, and will stand the hardest kind of continuous usage.
- |                |        |       |
|----------------|--------|-------|
| Diam. of pans. | Beam.  |       |
| 7.5 cm.        | 25 cm. | 26 00 |
- 2660/13—Ditto, ditto, in fine mahogany case with sliding door ..... 38 00



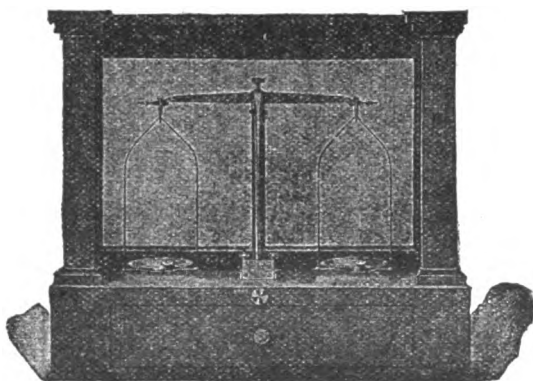
2660/12



2660/14



2660/9

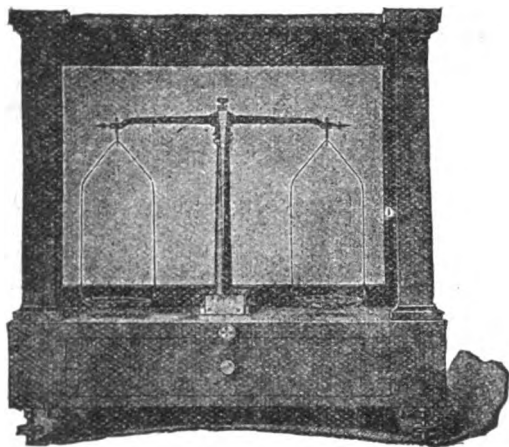


2661

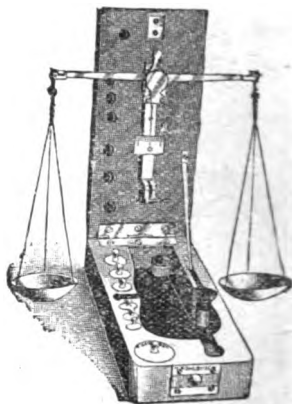
**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

- \*2660/14—**Balance, Agate Prescription Balance, P. 65, Troemner's.** Precisely same as No. 2660/7, but is provided with a Rider so the fractions of a grain can be weighed without the use of small weights. Beam is divided into  $\frac{1}{16}$  grains. Glass level and leveling feet are provided. All bearings "Agate."
- |                |        |         |
|----------------|--------|---------|
| Diam. of Pans. | Beam.  |         |
| 7 cm.          | 20 cm. | \$36 00 |
- \*2661—**Balance, Prescription Balance, P. 64.** Same scale as No. 2660/7, except it is larger and of greater capacity; will carry a load of two ounces in each pan, has  $9\frac{1}{4}$  cm. pans; glass case is roomy and comfortable to work with, and is a strictly first-class scale in every respect.
- |                |        |       |
|----------------|--------|-------|
| Diam. of Pans. | Beam.  |       |
| 9.5 cm.        | 23 cm. | 26 00 |
- 2661/1—Ditto, ditto, with all bearings of "Agate" ..... 31 00

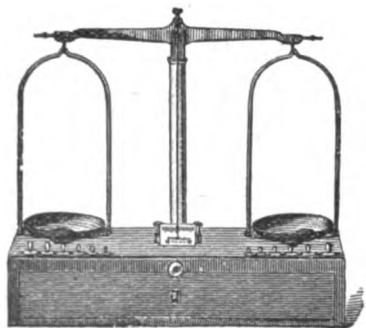
- \*2662—Balance, "Agate" Prescription Balance, P. 96, Troemner's, solid silver pans. Extra fine balance, in French polished mahogany case, with counterpoised door sliding upward; has leveling feet; glass level; balance has indicator pointing downward; beam is plated with gold, all the other parts nickel; pans are 7.5 cm. of solid silver; all the bearings are jeweled; glass case is extra large and roomy, and made of old mahogany; sensible to  $\frac{1}{2}$  mgrm ..... \$ 45 00
- \*2664—Balance, Surgeon's Pocket Scale. In polished mahogany box, 150 mm. long, 63 mm. wide and 32 mm. high. Including weights, either gramme, grain, or drams and scruples, fitted in the box. Sensitive to 1 mgrm ..... 15 00



2662



2664



2664/1



2665

- \*2664/1—Balance, No. G, Handsome Brass Prescription Scale, 7.5 cm. nickel-plated pans, 23 cm. beam, with adjusting screws on ends of beam; fine finish; sensitive to 2 mgrms ..... 10 00
- \*2664/2—Ditto, ditto, with set weights 1 oz. troy to  $\frac{1}{4}$  gr., or 20 grm. to 1 ctgrm., neatly set in box as shown in cut ..... 13 25
- \*2664/3—Ditto, ditto, with both sets of weights ..... 16 50
- \*2665—Balance, Troemner's Famous No. 12 and 13 Box Prescription Scale. In French polished ebony box with marble top, which has countersunk basin in it to hold the weights; pans are of solid nickel; scale is sensible to 2 mgrms.; has glass cover provided with stop hinges, all of the finest workmanship, and one of the most popular scales ever introduced. Used and sold in all parts of the world. All genuine scales have "Henry Troemner" stamped upon them. To avoid corrosion and cleaning, no metal parts are put on the outside of box, excepting the pans and hinges.
- |     |                |       |
|-----|----------------|-------|
| No. | Diam. of pans. |       |
| 12  | 7.5 cm         | 18 00 |
| 13  | 9.5 cm         | 20 00 |

REMEMBER OUR DISCOUNT.

\*2665/1—Balance, "Climax" Box Prescription Scale, fig. 120, Troemner's. This scale has 7 cm. nickel-plated pans; cherry-mahogany box and ebony mouldings; marble top; hinged cover; and is a reliable and substantial scale. Diam. of pans, 7 cm. .... \$ 12 50

\*2665/2—Balance, The New "Victoria" Box Prescription Scale, fig. 15, Troemner's. Box of "Antique" oak, of the finest finish, richly carved by hand; has drawer for weights, hinged cover with beveled French plate glass top; stop hinges; scale is full jeweled, like a watch; all bearings set with "Agate" to prevent rust or corrosion; pans are of solid nickel; scale has the very highest attainable sensibility; elegant Tennessee marble top; the entire mechanism is the very best and latest improved; scale is sensible to 2 mgrm., and owing to the "Agate" settings is specially adapted to damp climates.

No. Diam. of pans.

15

7 5 cm.

25 00



2665/1



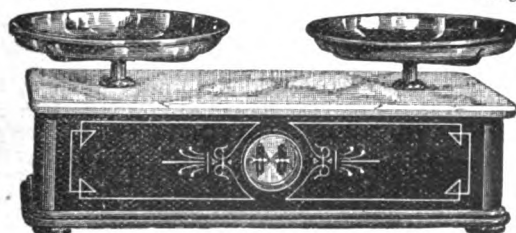
2666/1



2666



2665/2



2666/3

\*2666—Balance, Empire Box Scale (New), fig. 82, Troemner's. This scale has 20 cm. nickel pans, in a cherry box, with O. G. moulding, marble top, glass dial, etc. Diam. of pans, 20 cm. Capacity, 10 kilos

10 00

\*2666/1—Balance, Cherry Box Scale, fig. 87, Troemner's. Box made of cherry, with neat hand carved decorations. Heavy nickel-plated pans; glass dial; marble top, etc.

No.	Diam. of Pans.	Capacity.	Price.
1	20 cm.	10 kilos.	\$12 00
2	23 cm.	15 kilos.	14 00
3	25 cm.	20 kilos.	17 00

\*2666/3—Balance, Ebony Box Scale, fig. 89, Troemner's. In ebony box, gold lines; gilt dial; heavy nickel-plated pans; marble top.

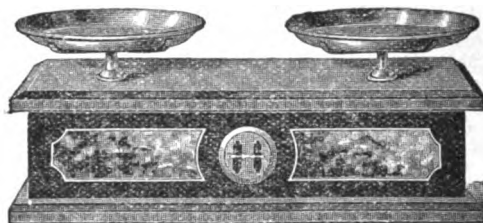
No.	Diam. of pans.	Capacity.	Price.
0	18 cm.	5 kilos.	\$12 00
1	20 cm.	7.5 kilos.	14 00
2	23 cm.	12 kilos.	16 00

- \*2666/4—**Balance, Marbleized Slate Box Scale, fig. 90, Troemner's.** Boxes are of marbleized slate, with richly variegated panels and gold lines; pans are nickel-plated.

Diam. of Pans.  
20 cm.

Capacity.  
10 kilos.

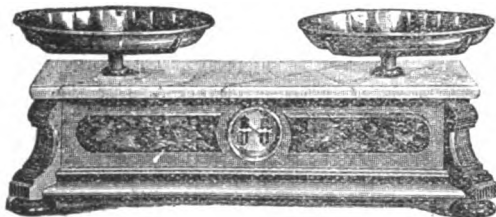
Price.  
\$19 00



2666/4

- \*2666/5—**Balance, Oiled Walnut Box Scale, fig. 91, Troemner's.**

Fine oiled walnut case, with bird's-eye maple panels; hand-carved feet, natural finish; heavy nickel-plated pans; marble top, made in three sizes.



2666/5

No  
0  
1  
2

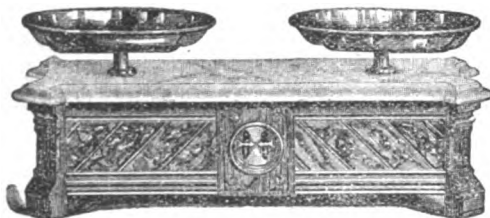
Diam. of Pans.  
18 cm.  
20 cm.  
23 cm.

Capacity.  
5 kilos.  
7.5 kilos.  
12 kilos.

Price.  
\$15 00  
17 00  
19 00

- \*2666/6—**Balance, Eastlake Box Scale (New), fig. 92, Troemner's.**

Very popular scale, highest grade; box of polished oak and Hungarian ash; Eastlake design; hand-polished; marble top, with chiseled recess moulding; gilt dial; nickel-plated pans. Diam. of pans, 23 cm. Capacity, 12 kilos (In mahogany or cherry



at same price)..... \$ 21 00

2666/6

- \*2666/7—**Balance, Antique Oak Box Scale (New), fig. 98, Troemner's.**

Scale is in an antique oak case, very richly moulded; front panel carved with delicate tracery; Tennessee marble top, with cut corners; gilt dial; heavy nickel-plated pans. This scale is the very newest design. Diam. of pans, 23 cm. Capacity, 12 kilos .....

22 00



2666/7

- \*2666/8—**Balance, "Queen Anne" Box Scale, fig. 94, Troemner's.** Very elegant scale of the finest finish; made "Queen Anne" style.

Box is of ebony, ornamented with reeds and gold lines; marble top, has richly chiseled moulding with circular corners; gilt dial; nickel-plated pans. Diam. of pans, 23 cm. Capacity, 12 kilos. ....

21 00



2666/8

Also furnished in a cherry box at same price.

REMEMBER OUR DISCOUNT.

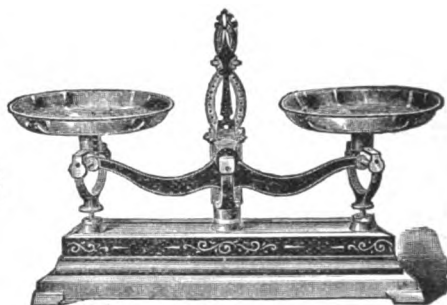


- \*2666/9—**Balance, Imperial Oak Box Scale (New), fig. 93, Troemner's.** New and elegant design in quartered oak, hand-carved mouldings—panel in relief, baronial style; has a fine Tennessee marble top (Knoxville stone); plate glass dial; nickel pans, etc., etc. Diam. of pans, 23 cm. Capacity, 12 kilos. \$ 25 00  
Same scale in cherry or mahogany finish, panel bronzed, at same price.

- \*2666/14—**Balance, Druggists' Counter Scale, fig. 20, Troemner's.** This scale is especially adapted for wholesale druggists, etc., etc. Made in the most substantial manner; all the working parts are set with flexible steel bearings; the movement is the latest improved, combining great capacity, high sensibility and smooth action; heavy large brass pans, etc. Diam. of pans, 33 cm. Capacity, 4 grms. to 20 kilos. 32 00



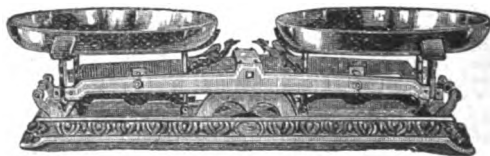
2666/9



2666/25 &amp; 2667



2667/1



2666/14

- \*2666/25—**Balance, Robervahl, French make.**

Capacity	1	2	5 kilos.
Each	\$3 40	4 10	5 45

- \*2667—**Balance, Robervahl Scale, fig. 75, Troemner's.** Neatly ornamented in gold lines; heavy brass pans and brass indicator.

No.	Diam. of Pans.	Capacity.	Price.
2	23 cm.	7 kilos.	\$7 50
3	20 cm.	5 kilos.	6 00
4	15 cm.	2 kilos.	5 00

- \*2667/1—**Balance, Gem Scale, No. 5, Troemner's.** Length of base, 25 cm.; size of scoop, 18x9 cm. This scale is adapted for weighing lozenges, bon-bons, etc.; is small, light and ornamental; brass scoop and weight plate; provided with a set of solid brass weights, 4 oz. and down, which are neatly fitted separately in a platform attached to the base of scale. Capacity, 250 grms. 6 00

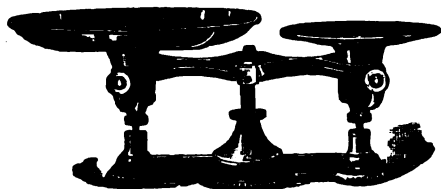
- \*2667/2—**Balance, Druggists' Trip Scale, fig. 76, Troemner's.** Very substantial and reliable scale; has one heavy brass pan, which is movable. Scale ornamented in black and gold. (Illustr. p. 120)

No.	Diam. of Pans.	Capacity.	
2	32 cm.	10 kilos.	7 00
3	23 cm.	4 kilos.	6 00
4	18 cm.	2 kilos.	5 00

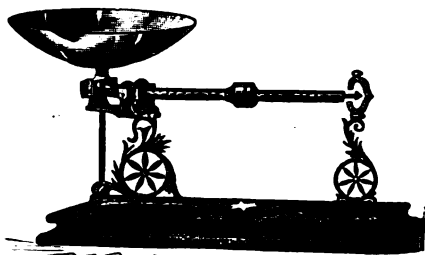
- \*2667/3—**Balance, Druggists' Trip Scale, fig. 74, Troemner's.** For wholesale druggists and manufacturing chemists. Has very large shallow or saucer-shaped movable pan, made of hammered copper. All bearings are of steel. (Illustr. p. 120)

No.	Diam. of Pans,	Capacity.	
0	58 cm.	20 kilos.	14 00
1	40 cm.	12 kilos.	10 00

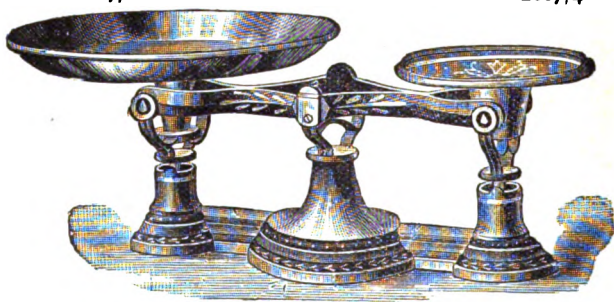
- \*2667/4—Balance, Candy Scale, fig. 16, Troemner's. Specially made for retail druggists for weighing out candy, cough drops, etc. Weighs to 1 lb.; notches on beam  $\frac{1}{4}$  oz.; nickel-plated; movable scoop, etc. Scale requires no weights, and is mounted on a polished oak base. Capacity, 1 lb. \$ 8 00
- \*2667/5—Balance, "Eastlake" Candy Scale, fig. 2, Troemner's. A new "Eastlake" design, of finest finish, mounted on a marble top box, made of polished oak, richly carved; entire scale is nickel-plated; scoop will hold 1.5 kilos mixed candies. Price does not include weights. Capacity, 7 grm. to  $1\frac{1}{2}$  kilos 20 00



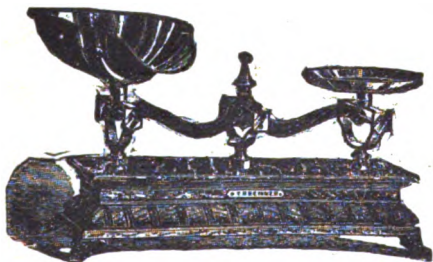
2667/2



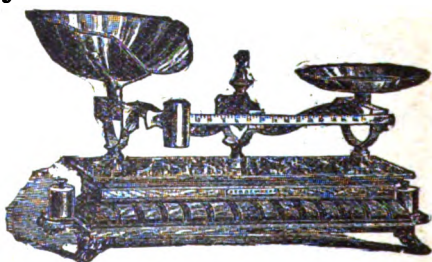
2667/4



2667/3



2667/5



2667/6

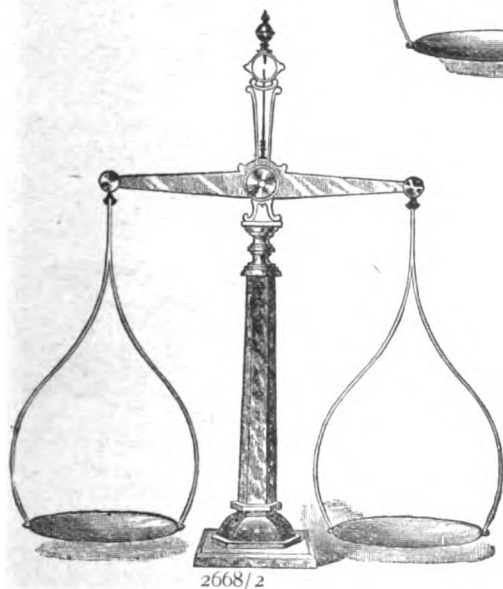
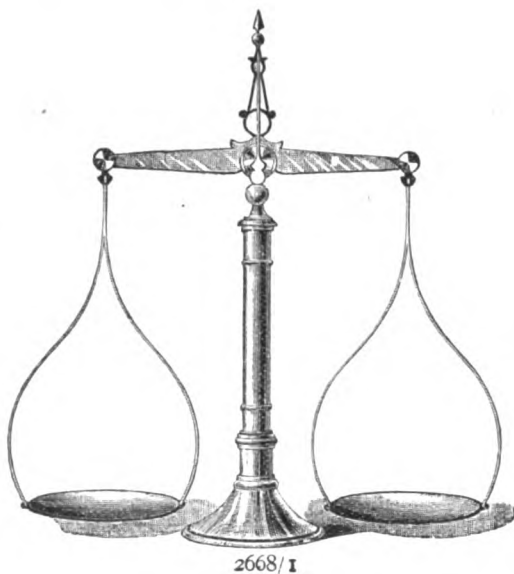
- \*2667/6—Balance, "Eastlake" Candy Scale, fig. 3, Troemner's. Same scale as 2667/5, but provided with a side beam on the front, which weighs to 1 lb., divided into  $\frac{1}{4}$  oz. notches, making only two loose weights necessary; these are provided and placed at either end of platform, as shown in cut. Capacity, 15 grms. to 1.5 kilos 25 00
- \*2668—Balance, "Agate" Counter Balance for Wholesale Druggists, fig. 62, Troemner's. This balance is specially made for wholesale druggists, and surpasses all other forms of weighing scales, for simplicity, durability and great accuracy. For the uniform and accurate weighing of costly drugs, essential oils, etc., etc., it is without an equal. It is used by Lazell, Dally & Co., Geo. A. Kelly & Co., Hall & Ruckel, Powers & Weightman, and many others. Has open beam, large movable copper pan, "Agate Bearings," etc., etc. (Illustr. p. 121)
- |                           |                         |  |
|---------------------------|-------------------------|--|
| Length of beam.<br>56 cm. | Diam. of pan.<br>35 cm. | Capacity.<br>20 kilos <span style="float: right;">40 00</span> |
|---------------------------|-------------------------|--|

REMEMBER OUR DISCOUNT.

**\*2668/1—Balance, Druggists' Counter Balances, fig. 66, Troemner's.** These balances are of the best finish, and of the most reliable mechanism; they are again rapidly growing into favor.

Length of Beam.	Diam. of pans.	Iron Column.	Brass Column.
50 cm.	28 cm.	\$ 20 00	\$ 25 00
45 cm.	25 cm.	18 00	22 00
40 cm.	23 cm.	16 00	20 00
35 cm.	20 cm.	14 00	18 00
30 cm.	18 cm.	12 00	14 00
25 cm.	15 cm.	10 00	12 00

Can be nickel-plated at small extra expense.



**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

**\*2668/2—Balance, Marble Counter Balance (New), fig. 68, Troemner's.** Column is of Italian marble, octagon in shape, ornamental top piece; box-end beam; all of the very finest finish; this style of balance is once more growing in favor.

Length of beam.	Diam. of pans.	
50 cm.	28 cm.	42 00
45 cm.	25 cm.	37 00
40 cm.	23 cm.	32 00
35 cm.	20 cm.	28 00

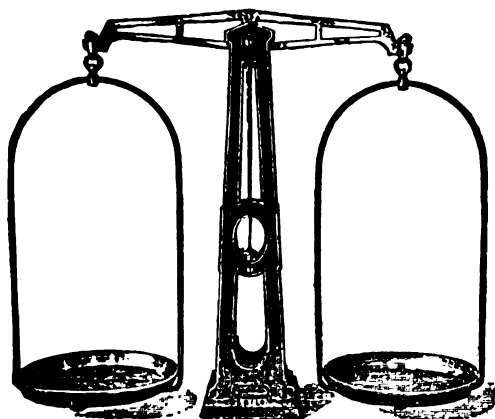
\*1 2669—Balance, for weighing large vessels. Suitable for making standard solutions.

Capacity.	Sensitive with full charge to:	Diam. of pans.	Lacquered.	Nickel-plated.
0.5 Kilo.	0.1 grm.	14 cm.	\$ 12 00	\$ 13 00
1 Kilo.	0.3 grm.	16 cm.	13 25	14 50
3 Kilos.	1.0 grm.	19 cm.	14 25	15 75
5 Kilos.	1.5 grm.	22 cm.	17 25	18 75
10 Kilos.	2.0 grm.	26 cm.	22 75	24 75
15 Kilos.	2.5 grm.	29 cm.	28 25	30 75
20 Kilos.	3.0 grm.	32 cm.	34 00	37 00

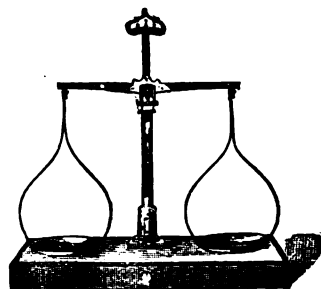
\*2670—Balance, Chemical Scale, Troemner's, fig. 28. For ordinary laboratory use, etc. On Walnut box with drawer, made strong to stand rough usage; sensible to 15 mgrms. Price includes a set of weights as specified; these are brass cup Troy weights, running down to  $\frac{1}{4}$  grain; scale is furnished with indicator pointing downward, if so desired.

No.	Beam.	Pans.	Set of Weights.	
1	25 cm.	12.5 cm.	32 oz.	\$ 15 00
2	23 cm.	10 cm.	16 oz.	12 00
3	18 cm.	9 cm.	8 oz.	10 00

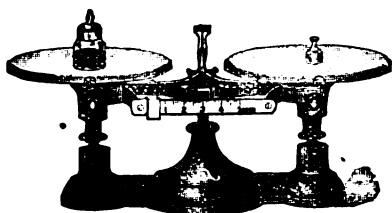
REMEMBER OUR DISCOUNT.



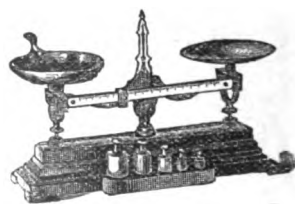
2669



2670



2671



2675 &amp; 2675/1

\*2671—Balance, Harvard Trip Scale. This balance is well suited for elementary experiments in physics, chemistry and general laboratory use. It has two 15 cm. round porcelain plates, upright indicator, side beam graduated to 10 grammes in  $\frac{1}{10}$ ths. Capacity, 1 Kilo.

7 50

\*2675—Balance, New Dispensing Scale, fig. 6, handsomely finished scale with 9.5 cm. movable nickel-plated pans. Side beam on front of scale, with sliding weight. Beam is divided into 120 divisions, each division representing 1 grain—an extra row of metric divisions is placed on the bottom edge of beam, each representing one decigram. Platform or shelf is attached to base of scale, in which are fitted separately a set of solid brass troy weights, 2 oz. down. Scale is sensible to 30 mgrms.

8 00

\*2675/1—Ditto, ditto, ditto, but with a set of solid brass gramme weights, 50 grms. down, instead of with oz. weights.

8 00

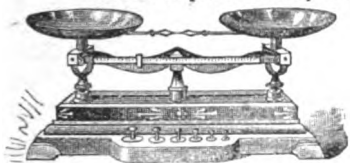
All Troemner's Balances and Scales, not enumerated, will also be furnished at manufacturers' prices.

\*2676—**Balance, Jewelers' Counter Scale (New), fig. 189, Troemner's.** A new form of counter scale, suitable for weighing silverware, watch cases, jewelry, etc.; has 15 cm. nickel pans; all bearings are of Agate, to insure the highest attainable sensibility with endurance. Has a side beam on front, divided into pennyweights and grains, by which the exact weight of an article is very quickly ascertained, and does away with small weights; a set of weights (12 oz.) is arranged on a platform in front of scale. This scale is sensible to one grain. Complete

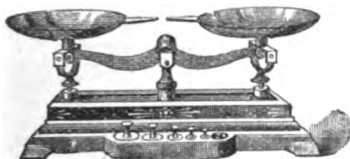
\$ 18 00

\*2676/1—**Balance, Laboratory Scale (New), fig. 7, Troemner's.** Scale specially designed for Laboratory and Pharmaceutical work; has 15 cm. nickel pans, which are movable. Scale will carry  $\frac{1}{2}$  Kilo in each pan; is sensible to 30 mgrms.; has a full set of weights, running from 8 oz. troy and down to 1 grain; these are neatly fitted in a projecting shelf attached to the base of scale. Metric weights furnished in place of troy when so desired. Capacity  $\frac{1}{2}$  Kilo

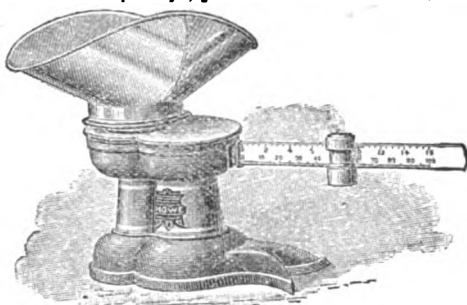
9 00



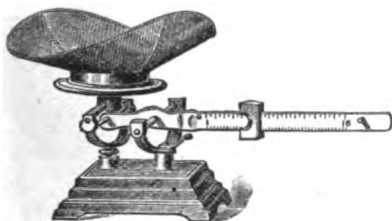
2676



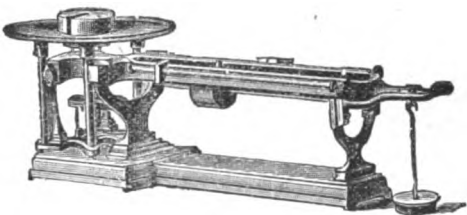
2676/1



2678



2678/1



2677

\*2677—**Balance, Troemner's Solution Scale (New), fig. 80.** This balance is also very suitable as **MOISTURE BALANCE**. It will weigh liquids with an accuracy that cannot be approached by ordinary methods. The scale is provided with two weighing-beams and sliding poises. One of these is divided into one hundred parts, each part representing 1 gramme; the other beam is divided into ten parts, each representing 100 grammes. A bar with a sliding poise is placed under the weighing beams, for the purpose of balancing the empty bottle or container, which is quickly done by sliding the poise along the bar until a correct balance is secured. Capacity, 20 kilos

20 00

\*2678—**Balance, (Moisture Balance),** for ascertaining the percentage of moisture in ore. Beam has  $\frac{1}{2}$  oz. to 16 oz., and also percentage 0 to 100 per cent graduation

10 00

\*2678/1—**Balance, (Moisture Balance),** similar to No. 2678. Beam graduated from  $\frac{1}{4}$  oz. to 1 lb. with percentage marks 100 to 0

6 00

\*2678/2—**Balance, (Moisture Balance); the best balance for moisture determinations.** The upper part of the beam is graduated in ounces, the lower row of figures gives the percentage of loss, if a charge of two pounds is used. Weights from 2 lbs. down are included. (Illustr. p. 124)

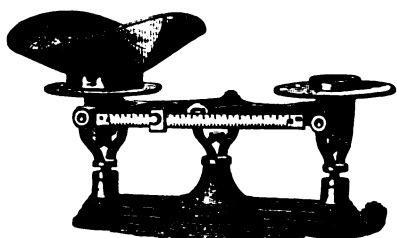
10 00

\*2679—**Balance; Cream Test Balance, Kohlbusch's.** For testing cream by the Babcock method. It is the best, quickest and most sensitive scale made for the purpose, showing 1 ctgrm. with full charge. The large poise on beam and mill-headed screw on end of beam are to balance the bottle, the other weight on beam is to be set at 9 and 18 grammes. (Illustr. p. 124)

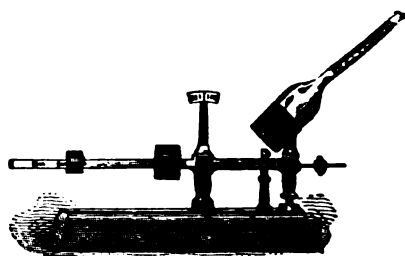
10 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

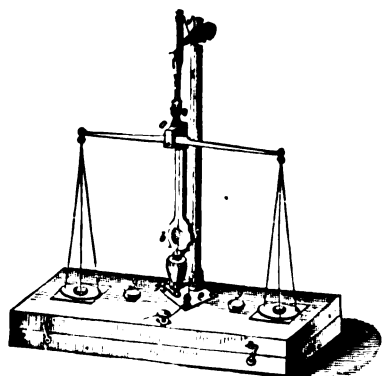
*2680—Balance, for Blow-Pipe Analysis, Plattner's, in polished wooden box; without weights .....	\$ 17 65
I 2680/1—Ditto, ditto, with a set of weights, 1000 to 1 milligramme .....	20 00
I 2680/2—Ditto, ditto, with glass case, without weights .....	30 90
I 2680/3—Ditto, ditto, ditto, with set of weights, 1000 to 1 milligramme .....	33 25



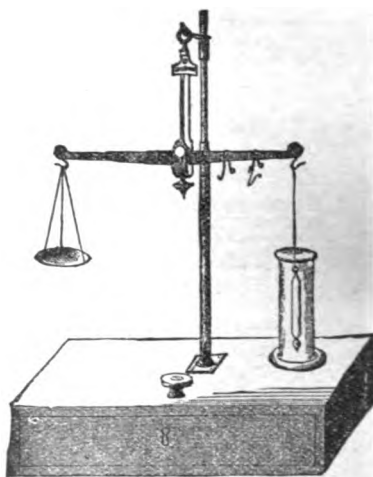
2678/2



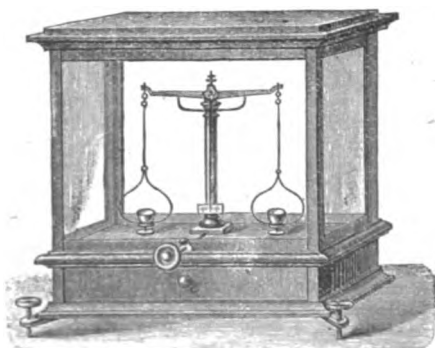
2679



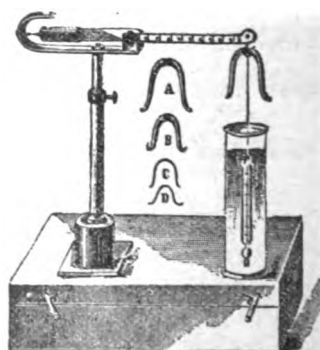
2680



2690



2680/4-5-6-7

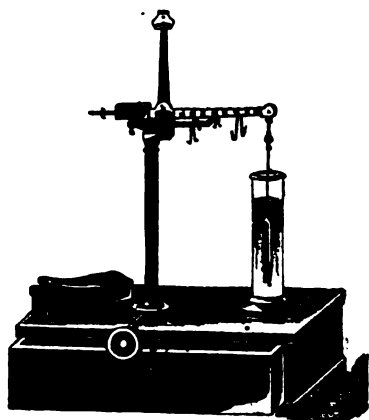


2692

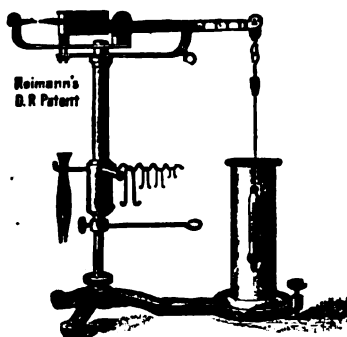
*I 2680/4—Ditto, ditto, in elegant glass case. This balance is highly finished and nickel-plated. Without weights .....	40 00
*I 2680/5—Ditto, ditto, ditto, with <b>Platinum Scale Pans</b> .....	47 50
*I 2680/6—Ditto, ditto, ditto, with a set of weights, 1000 to 1 milligramme .....	42 35
*I 2680/7—Ditto, ditto, ditto, with <b>Platinum Scale Pans</b> and a set of weights, 1000 to 1 milligramme .....	49 85
*2690—Ditto, <b>Specific Gravity, Mohr's</b> , in polished box; for liquids and solids, with Reimann's patent thermometer body, riders, glass cylinder, forceps, and extra pans for regular weighing .....	17 65

REMEMBER OUR DISCOUNT.

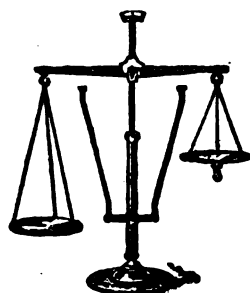
- \*2692—**Balance, Specific Gravity, Westphal's**, the best balance for determining the specific gravity of liquids; with Reimann's patent thermometer body; in polished wooden box, complete (Illustr. p. 124)..... \$ 13 25
- I 2692/1—**Patent Thermometer Body** for either No. 2692 or No. 2690, subject to same discount as the Balances..... 2 65
- \*I 2692/2—**Balance, Specific Gravity**, with Reimann's patent thermometer bodies, for the determination of the specific gravity of liquids, lighter and heavier than water, **to the fourth decimal**, in mahogany case with lock and key, agate knives and planes. Complete with rider weights, glass cylinder, forceps and reserve thermometer body.... 32 00
- I 2692/3—Ditto, ditto, same as No. 2692/2, with glass case..... 39 00
- \*I 2692/4—Ditto, ditto, same as No. 2692/2, but with two thermometer bodies, displacing 10 grammes of distilled water, and with two thermometer bodies, displacing 1 gramme of distilled water. The latter require only 5 cc. of liquid..... 39 00



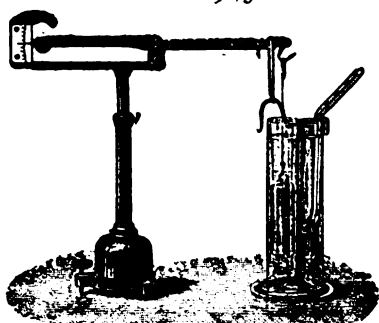
2692/2 &amp; 4



2692/5



2694/1 &amp; 2



2693

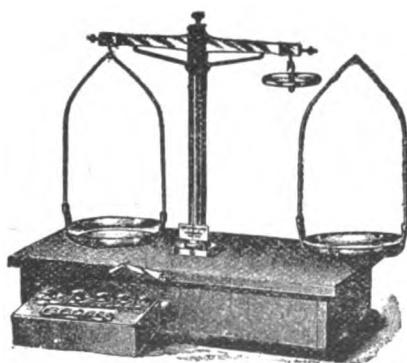
**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

- \*I 2692/5—**Balance, Specific Gravity**, with spring arrest, **Reimann's Patent**, for the determination of the specific gravity of liquids, lighter and heavier than water. Beam with agate knives and planes, patent thermometer body, rider weights, glass cylinder and forceps. A fine walnut case with glass plate is furnished with this balance. It can be set up ready for use almost in an instant. **The best balance of its kind**..... 25 00
- \*2693—**Balance, Specific Gravity**, for determining the specific gravity of liquids; **Sartorius modification**. Complete, in case..... 25 00
- I 2693/1—Ditto, ditto, **Sartorius modification**, for determining the specific gravity of liquids and solids. Complete, in case..... 30 00
- \*2694/1—**Balance, Specific Gravity**. Beam 35 cm. long, swinging on very delicate knife edges, with indicator. The column is adjustable as to height. The pans are 12.7 cm. in diameter; one is provided with a hook to suspend objects to be weighed, etc. The balance has also an adjustable beam rest. Sensitive to 15 milligrammes..... 15 00
- \*2694/2—Ditto, ditto, same as No. 2694/1, but with fixed beam rest; beam 25 cm. long, pans 9.5 cm..... 8 00

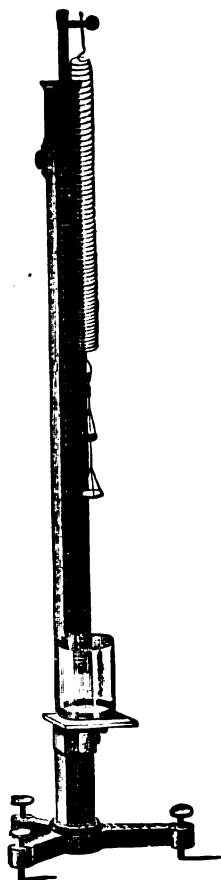
- \*2694/3—Balance, Specific Gravity, without beam rest. Beam 18.4 cm. long ..... \$ 4 50
- \*2694/4—Balance, Specific Gravity. (Hydrostatic Balance.) This balance is designed for school and commercial use. Balance has 25 cm. beam, 14 cm. pans, on box with drawer. Capacity 1 Kilo to 1 Ctrgm, furnished with brass weights 500 grammes to Ctrgm. (1 Kilo in all). It can be used for ordinary weighing by displacing the counterpoise pan with the scale below. Price complete, with weights ..... 29 40
- \*2695—Ditto, ditto, Jolly's Spiral, for rapid determination of the specific gravity of minerals, etc ..... 17 00



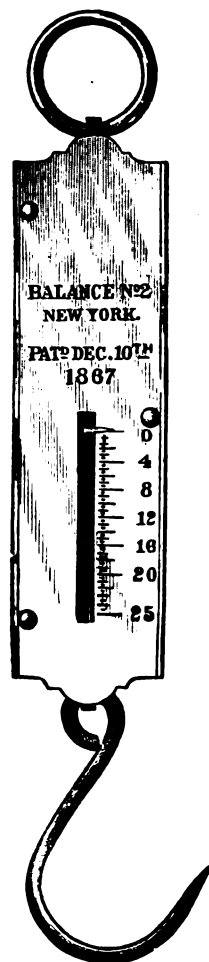
2694/3



2694/4



2695



2696 &amp; 2696/1

REMEMBER OUR DISCOUNT.

\*2696—Balances, Spring, with hook.

8 oz. in $\frac{1}{4}$ oz. Divisions .....	1 00
64 oz. in 1 oz. " .....	50
25 lb. in $\frac{1}{4}$ lb. " .....	30
50 lb. in 1 lb. " .....	50
30 lb. in $\frac{1}{2}$ lb. " .....	2 50
*2696/1—Ditto, same as No. 2696, but with English and Metric Divisions.	
8 oz. in $\frac{1}{4}$ oz. Divisions and 250 grms. in 10 grms. Divisions .....	1 10
64 oz. in 1 oz. Divisions and 2000 grms. in 25 grms. " .....	50
30 lb. in $\frac{1}{2}$ lb. Divisions and 15 Kilos in 100 grms. " .....	2 50

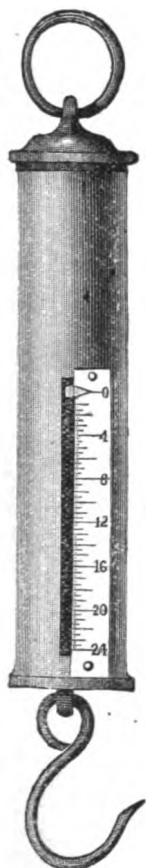


**\*2696/2—Balances, Spring, Cylindrical, with hook.**

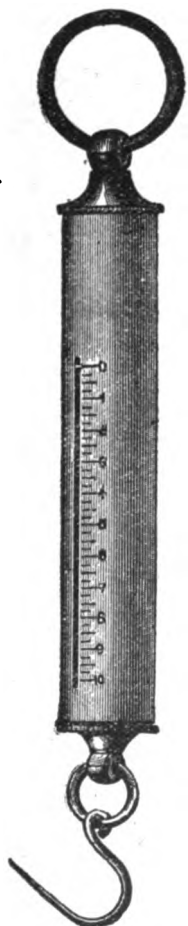
12 lb. in $\frac{1}{4}$ lb. Divisions.....	\$	75
25 lb. in $\frac{1}{4}$ lb. ".....		75
50 lb. in $\frac{1}{4}$ lb. ".....		1 50

**\*2696/3—Balances, Spring, Cylindrical, with hook; brass, nickel-plated.**

15 lb. in $\frac{1}{4}$ lb. Divisions.....	2	25
25 lb. in $\frac{1}{4}$ lb. ".....	3	75
50 lb. in $\frac{1}{4}$ lb. ".....	3	75
1000 grams in 25 gram. ".....	2	25
2000 grams in 25 gram. ".....	4	15
5000 grams in 50 gram. ".....	4	65



2696/2



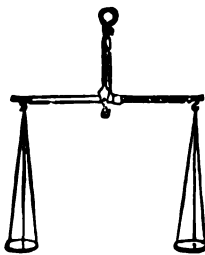
2696/3



2700



2710



2720

**APPROXIMATE EQUIVALENTS:**

1 inch = 25 mm    1 foot = 30 cm.    1 fluid oz. = 30 cc.    1 pint = 600 cc.  
 1 quart = 1000 cc.    1 gallon = 3800 cc.    1 av. oz. = 28 grm.    1 pound = 450 grm.

**\*2700—Balances; German Hand Scales, with brass beam and horn pans suspended by silk cords, fine steel bearings, very sensible.**

Diam. of pans, 4 5 6 8 9 10.5 12 13.5 15cm.  
 Length of beam, 11 12 15 19 22 25 27 30 32cm.  
 Each, \$1 15 1 40 1 55 2 00 2 20 2 55 3 05 3 30 3 75

**\*2710—Balances, English Hand Scales, brass pans, with weights in box. With 13-cm. beam, \$0 75; 15 cm. beam.....**

0 90

**\*2720—Ditto, German Hand Scales, with saddle, (sliding weight) on graduated brass beam, horn pans, very delicate and sensible. No weights needed.**

For five grains, divided into $\frac{1}{4}$ grain.....	2	65
For 4 grains on one side and 25 ctgrm. on the other.....	3	40
For 8 grains on one side and 50 ctgrm. on the other.....	3	70
For 15 grains on one side and 100 ctgrm. on the other.....	4	50
For 60 grains on one side and 5 grammes on the other.....	5	50

- \*2725—**Balance; Platform Scale**, to set on table, weighing 240 lbs. to  $\frac{1}{2}$  ounce (equalling 110 Kilos. to 15 grms), with tin scoop..... \$ 15 00  
 With brass scoop..... 16 00
- \*2726—**Ditto, Platform Scale**, to set on floor, with weights. **Howe's best make.**

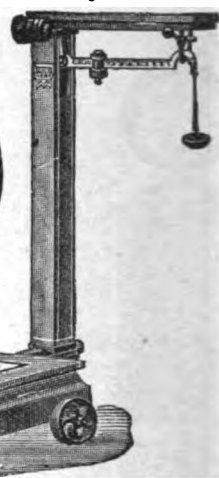
Equalling approximately			Without Wheels.	With Wheels.
Capacity 400 lbs.,	180 kilos.	Platform 38 x 56 cm.	\$23 00	26 00
Capacity 600 lbs.,	275 kilos.	Platform 40 x 60 cm.	30 00	33 00
Capacity 800 lbs.,	365 kilos.	Platform 42 x 60 cm.	34 00	38 00
Capacity 1000 lbs.,	450 kilos.	Platform 42 x 66 cm.	39 00	43 00
Capacity 1200 lbs.,	550 kilos.	Platform 48 x 70 cm.	44 00	48 00
Capacity 1500 lbs.,	680 kilos.	Platform 53 x 75 cm.	52 00	56 00
Capacity 2000 lbs.,	900 kilos.	Platform 58 x 80 cm.	70 00	75 00
Capacity 2500 lbs.,	1140 kilos.	Platform 65 x 85 cm.	80 00	85 00



2725



2785



2726



2740



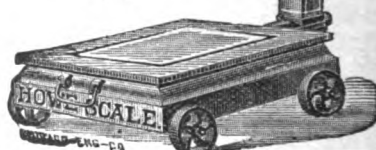
2750



2751



2760



2731



2790

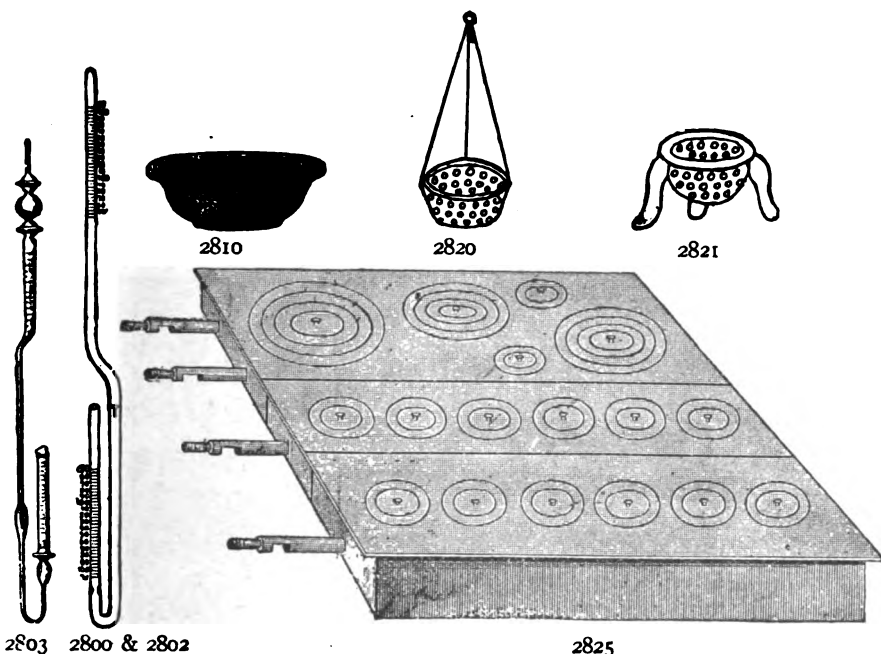


2727

- \*2727—**Ditto, Platform Ore Scale**, made entirely of metal, very strong. Capacity 2500 lbs. (equalling approximately 1150 kilos). Platform 60x110 cm..... 126 00
- 2728—**Ditto, Cheap Household Scales**, furnished at lowest prices.
- \*2740—**Balloons of Collodion.**
- | No.                | 1      | 1a   | 2    | 3    | 4     |
|--------------------|--------|------|------|------|-------|
| Approximate Height | 10     | 15   | 23   | 28   | 40cm. |
|                    | \$0 37 | 0 50 | 0 75 | 1 25 | 1 75  |
- 2741—**Balloon**, of gold-beater's skin, French, capacity about 19 lit. fig. 2740
- \*2750—**Ditto**, of glass, with glass stop-cock, for weighing gases..... 3 75
- \*2751—**Ditto**, new style, with two very light stoppers..... 1 85
- \*2760—**Ditto**, for determining the specific gravity of vapors, about 150 cc..... 1 85
- 2768/1, etc—**Barometer, Mercurial.** See Catalogue of Physical Apparatus. 90
- \*2781—**Barometer, Aneroid**, nickel-plated,
- |          |                     |       |        |                      |
|----------|---------------------|-------|--------|----------------------|
| Diameter | 7 $\frac{1}{2}$ cm. | 9 cm. | 10 cm. | 11 $\frac{1}{2}$ cm. |
| Each     | \$5 00              | 6 00  | 7 00   | 8 00                 |

REMEMBER OUR DISCOUNT.

- \*2785—**Barometer, Aneroid**, pocket size, 45 mm. diameter, compensated for temperature, with altitude scale, gilt case, silvered metal dial, extra quality. (Illustr. p. 128)
- |  |          |
|--|----------|
| Up to 3000 ft. (=915 mtr.) altitude.....             | \$ 35 00 |
| Up to 8000 ft. (=2440 mtr.) ".....                   | 36 00    |
| Up to 16000 ft. (=4875 mtr.) ".....                  | 37 00    |
| Up to 16000 ft. (=4875 mtr.) " with thermometer..... | 42 00    |
- 2786—Ditto, ditto, oxidized, metal dial, with thermometer and fine compass on reverse. Up to 16000 ft. (=4875 mtr.) altitude; fig. 2785..... 60 00
- \*2790—Ditto, ditto, Surveyors', 11 1/4 cm. diameter, oxidized, rack vernier, raised scale; with loupe and sliding ring. Sole-leather sling case. Up to 1000 ft. (=305 mtr.) altitude. (Illustr. p. 128)..... 100 00
- \*2800—**Barometer, Bunsen's Syphon**, filled, for the determination of boiling points, graduated in millimeters, without stop-cock..... 12 50
- 2800/1—Ditto, ditto, with stop-cock..... 14 50
- 2801—Ditto, with support. without and with stop-cock.  
\$15 00 17 00
- \*2802—Ditto, ditto, without stop-cock, not filled, graduated in millimeters..... 3 75
- \*I 2803—**Barometer, Syphon, new form**, with absolutely air-tight stop-cocks, graduated in 1/2 mm., unfilled. It is easily filled and emptied, and its advantages over other syphon barometers are apparent..... 18 65



**APPROXIMATE EQUIVALENTS:**  
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1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*2810—**Basins**, enameled, like granite.

Diameter	24cm.	26.7cm.	29.2cm.	31cm.	33cm.
Each	\$0 42	0 50	0 56	0 63	0 75
Per dozen	4 50	5 40	6 08	6 75	8 10

- \*2820—**Baskets**, of lead, for holding pieces of zinc or ferrous sulphide..... 65

- \*2821—Ditto, with three legs..... 1 00

- \*2825—**Bath, Evaporating**, as used by the Cambria Iron Co., consisting of an iron box with cast iron tops having six holes in a row, with rings for use with smaller dishes, and being heated by a properly constructed tube burner, so that the flame does not come in direct contact with the bottom of the dishes, but when turned on full is about 2.5 cm. distant. These baths are arranged to be used in series, being made in three forms, with right and left hand and end flanges. They can be set in opening in table, the flanges giving support, the top being on a level with table.

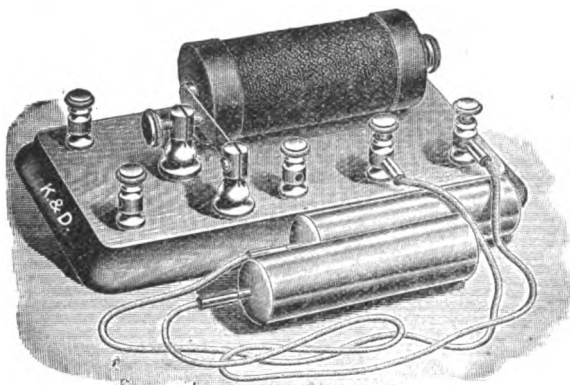
Section with 12 holes, 13.5 cm. diameter.....	60 00
Section with 18 holes.....	90 00
Section with one 30 cm., two 25 cm. and two 10 cm. holes.....	60 00

\*2827—**Battery, Electro-Medical, Household, No. 28.** It is all that can be asked for a high grade coil of this character. All its parts are substantially built and contacts are of platinum. Three different currents may be obtained, primary, secondary, and both combined. Two colors of silk are used. It is packed in a neat hinged and clasped box which may be used for a carrying case. Each.....

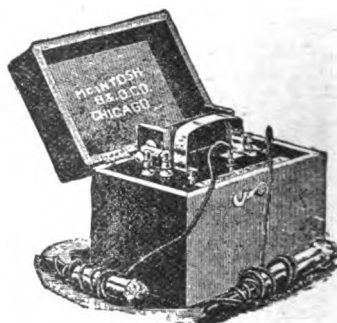
\$ 4 15

\*2828—**Battery, Electro-Medical.** Pocket Battery in polished mahogany box 114x76x38 mm. Complete with Zinc, Carbon, Coil and Regulator, silk-covered Cords; Shell Electrodes, and Vial of Bi-sulphate of Mercury.....

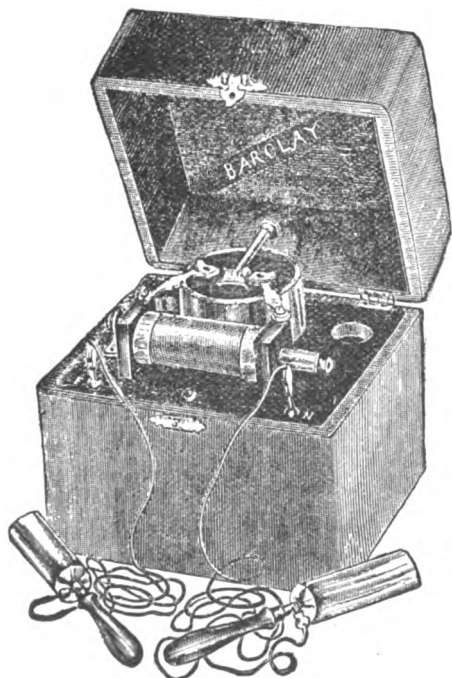
4 20



2827



2830



2829



2828

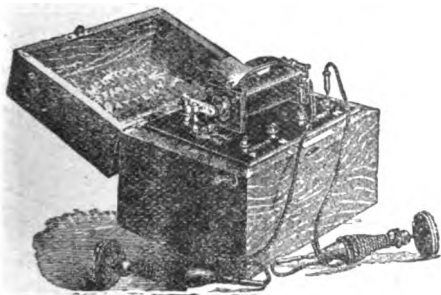
\*2829—**Battery, Electro-Medical.** New Battery for physicians' or household use. An excellent machine at a low price. Patent Hydrostat, hinged Rod, silk-covered Cords and Shell Electrodes with handles. All metal parts nickel-plated and burnished. In handsome polished wood case.....

\*2830—**Battery, Electro-Medical, for family use, best make**.....

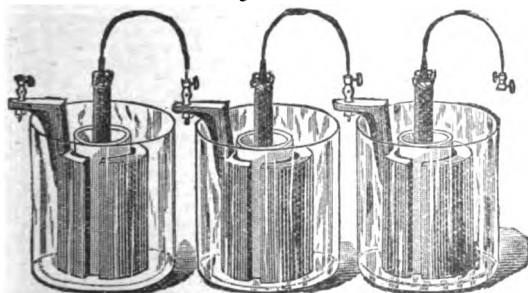
9 00  
16 65

- \*2831—**Battery, Electro-Medical**, for physicians, with first-class sponge electrodes and new cable conducting cords ..... \$ 30 00
- \*2840—Ditto, ditto, **Gaiffe's**, No. 201 ..... 11 50
- 2841—Ditto, ditto, Gaiffe's improved pattern, No. 203, producing the very mildest and most powerful current procurable ..... 22 00
- \*2850—**Battery, Carbon**. No. 1 has heavy cast zincs, while No. 2 is provided with rolled zincs.

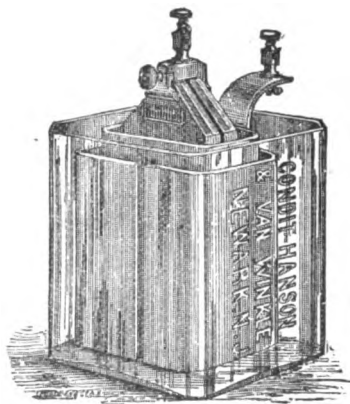
	No. 1 Jar, 10x13 cm.	No. 2 15x20 cm.
Approximate Capacity	1 lit.	4 lit.
Cells, complete	\$1 95	3 55
Zinc (No. 2 Zinc including connector)	75	1 35
Connector for Zinc	18	—
Carbon	15	40
Clamp for Carbon, <b>platinum faced</b>	55	1 00
Porous Cup	15	45
Jar	30	50



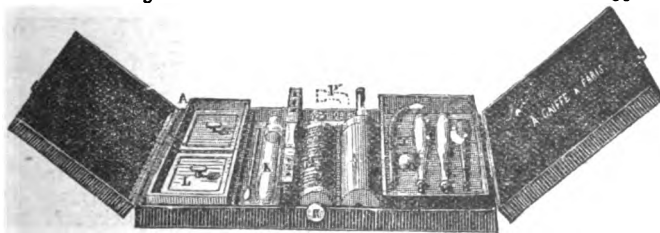
2831



2850



2855



2840

- \*2855—**Battery, Carbon, for nickel-plating**. An improved Bunsen cell of great power, for nickel and electro-plating, etc. 380 lit. of nickel solution have been used successfully with two of these cells. The glass jar holds six lit.

Cell, complete	8 00
Carbon, $2\frac{1}{2} \times 11\frac{1}{2} \times 23$ cm.; per Pair	1 25
Carbon Clamp, platinum faced	1 60
Porous Cup	90
Zinc, heavy-rolled	2 15
Zinc Connector	30
Glass Jar, $15 \times 20 \times 23$ cm.	1 85

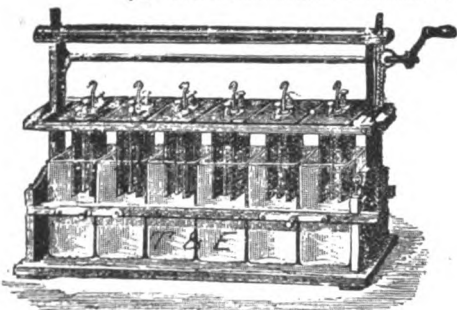
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*2861—Battery, Carbon, Plunge.** It is a very powerful battery, well suited for heavy work, with large induction coils, motors, etc. The raising device is with chain and pulley by means of a crank. Any number of the elements may be suspended out of the solution when it is desired to use only a part of them. The caps are of hard fibre and the brass parts are nickel-plated. Mounted in a neat hardwood case. Connections for series and multiple are easily made. Zincs and Carbons 100x150x8 mm.

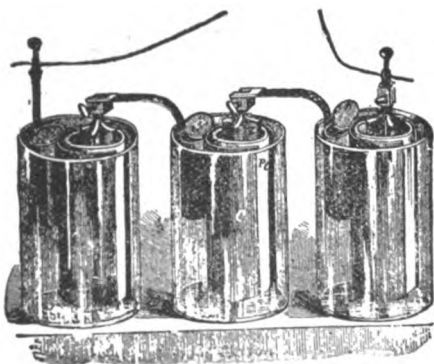
Battery of 4 Cells. 6 Cells.  
Complete \$26 25 37 50

**\*2870—Battery, Daniell, Jar 15x20 cm.**

Cell, complete .....	\$ 2 40
Zinc .....	50
Copper .....	50
Porous Cup .....	32
Pocket .....	25
Clamp .....	30
Jar .....	55



2861



2870



2877

**\*2877—Battery, Mesco Dry Battery,** for call bells, annunciators, burglar alarms, telephones, medical apparatus, laboratory and all open-circuit use.

Each	Per dozen.	Per 50.	Per 100.
60cts	\$6 60	25 00	47 50

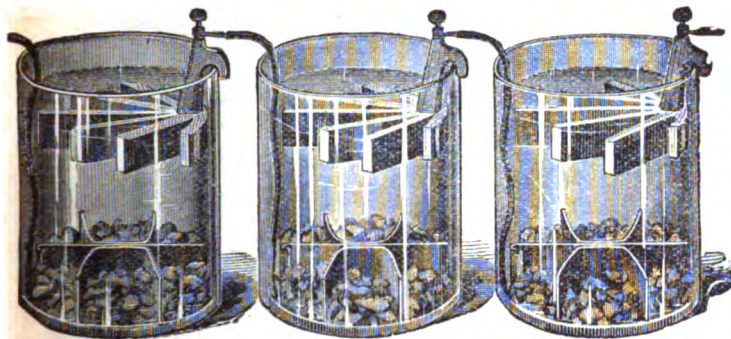
**2878—Battery, New Excelsior Dry Battery,** for annunciators, telephones, door bells, gas lighting, gas engines, slot machines and all other kinds of work for which open-circuit batteries are best adapted. Similar to No. 2877.

	Type B	Type C	Type E	Type D
Dimensions	7.5x18 cm.	6.3x15 cm.	4.5x10 cm.	3.8x10 cm.
Weight	1.4 kilos.	0.8 kilo.	340 grms.	240 grms.
Voltage	1.55	1.5	1.5	1.5
Internal Resistance	0.15 Ohm.	0.2 Ohm.	0.3 Ohm.	0.3 Ohm.
Amperage	7½ to 10	5 to 7½	3 to 5	2½ to 4
Each	\$ 1 35	0 90	0 83	0 75
Per dozen	14 50	9 75	8 75	7 75
Per 50	54 50	36 25	33 00	29 00
Per 100	98 00	65 00	59 50	52 00

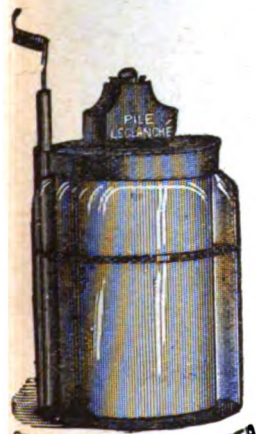
REMEMBER OUR DISCOUNT.



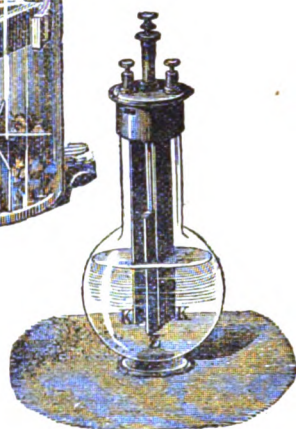
- 2879—Battery, Anderson Dry Battery No. 1.** E. M. F. 2 Volts, Current 15 to 18 Amperes. The best cell for all open-circuit or intermittent work, where a strong reliable battery is required. Total Height 182 mm., diameter 63 mm. Each ..... \$ 0 50
- \*2885—Battery, Crowfoot Gravity, Jar 15x20 cm.**
- |                                      |      |
|--------------------------------------|------|
| Cell, complete.....                  | 1 20 |
| Copper.....                          | 20   |
| Zinc, with hanger and connector..... | 55   |
| Jar.....                             | 50   |
- \*2890—Ditto, Grenet, best imported.**
- | No. 1  | <sup>2</sup> / <sub>4</sub> lit. | <sup>3</sup> / <sub>1</sub> lit. | <sup>4</sup> / <sub>2</sub> lit. |
|--------|----------------------------------|----------------------------------|----------------------------------|
| 15cm.  | 20cm.                            | 25cm.                            | 30cm. high.                      |
| \$1 75 | 3 00                             | 3 75                             | 5 50                             |



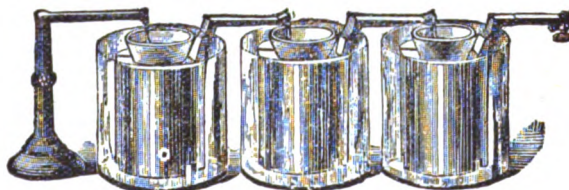
2885



2910



2890



2900

- 2891—Ditto, Grenet, best imported, with 2 Zincs and 3 Carbons.**  
2 lit., 30 cm. high, \$10 60    3 lit., 35 cm. high, \$17 00

- 2892—Battery Carbons, for Grenet Battery, for <sup>1</sup>/<sub>4</sub> lit. <sup>1</sup>/<sub>2</sub> lit. 1 lit. 2 lit.**  
Per Pair ..... \$0 70    1 00    1 65    2 00

- 2893—Battery Zincs, for Grenet Battery, each.....**    25    30    31    37

- \*2900—Battery, Grove.**

Cell, complete, without Standard.....	4 25
Zinc.....	75
Platinum.....	3 00
Porous Cup.....	18
Jar.....	35
Standard for same.....	1 00

- \*2910—Ditto, Leclanche, Disque, cell complete, with Sal Ammoniac.**

Each,	Per dozen,	Per 50,	Per 100
\$1 00	11 00	42 00	77 00

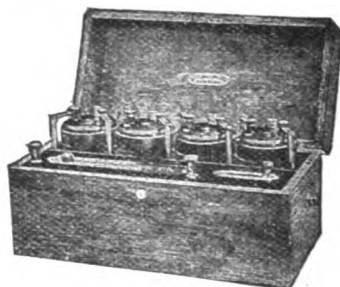
- 2910/1—Battery Zincs, for Leclanche Battery; per doz., \$1 10; each.....**    12

- \*2911—Battery, Leclanche, Prism, cell complete..... I 75  
 \*2912—Ditto, Quad, the best carbon battery for electric bells (per dozen, \$13 00); each ..... I 20  
 \*2920—Battery, Smee, with platinized silver plates.

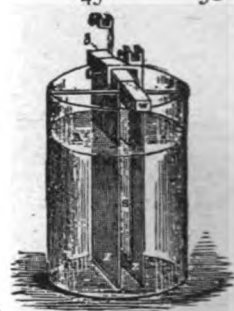
	No. 1.	2.	3.	4.
Jar 9x10 $\frac{1}{2}$ cm.	11 $\frac{1}{2}$ x11 $\frac{1}{2}$ cm.	13x18 cm.	15x20 cm.	
Cell, complete .....	\$6 00	7 75	11 60	15 20
Zinc, rolled .....	per pr. 1 20	1 40	2 25	3 15
Platinized Silver Plate and Connection	3 55	4 95	8 05	10 15
Zinc Clamp.....	95	1 15	1 45	1 45
Jar .....	30	30	45	50



2921



2921



2920



2912



2911

**\*2921—Battery, Storage, United States Battery Co.'s.**

	No. 1	2	3	4	5	6	7
<b>Price of Battery complete,</b>	\$1 65	2 50	5 00	8 30	13 30	25 00	27 50
Capacity, ampere hours,	3	5	12	30	60	90	120
Voltage, open circuit,	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Voltage, closed circuit,	2.35	2.35	2.35	2.35	2.35	2.35	2.35
Discharge rate, 8 hours,	.40	.625	1.5	3.75	7.50	15	15
Recharge rate,	1 ampere 4 hours.	1 $\frac{1}{4}$ amperes 3 hours.	4 amperes 5 hours.	6 $\frac{1}{2}$ amperes 6 hours.	12 $\frac{1}{2}$ amperes 6 hours.	20 amperes 6 hours.	25 amperes 6 hours.

**Polished Wooden**

**Boxes for portable use:**

For 2 cells,	1.65	2.20	3.30	4.40	5.55
For 4 cells,	2.75	3.30	4.40	5.55	6.65
For 6 cells,	3.85	4.40	5.55		

**\*2922—Battery, Storage, American Battery Co.'s.**

Capacity at eight hour rate of discharge—from 8 to 210 ampere-hours inclusive.

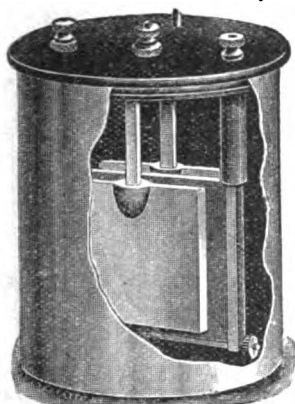
	R.1	W.1	J.1	J.2	J.3	J.4	J.5	J.6	J.7
<b>Price of Battery complete,</b>	\$3 30	5 40	8 30	12 30	16 30	20 50	24 65	28 80	33 00
Normal or eight hour rate of discharge, in amperes,	1	2	4	7 $\frac{1}{2}$	11	15	19	23	26
Capacity in ampere hours at normal or eight hour rate of discharge,	8	16	32	60	90	120	150	180	210
Normal charging rates in amperes,	1	2	4	7 $\frac{1}{2}$	11	15	19	23	26

**Prices for larger AMERICAN STORAGE BATTERIES on application.**

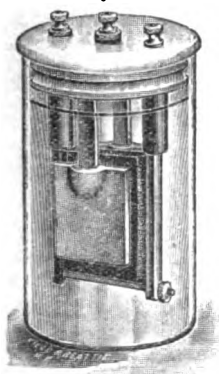
REMEMBER OUR DISCOUNT.



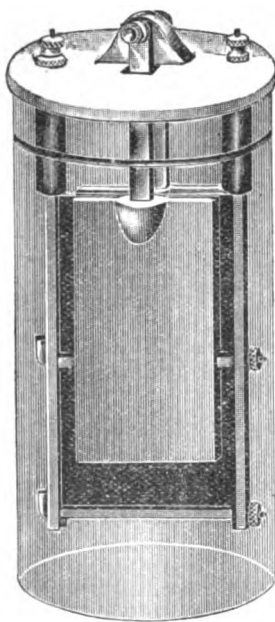
<b>*2924—Battery, Edison Primary, formerly known as Edison-Lalande Batteries.</b> Their merits are well known everywhere, <b>Type "BB,"</b> for stationary engines, slot machines and small gas engines; capacity 100 Ampere-Hours; with porcelain jar.....		\$ 2 50
Complete Renewal for this battery .....	\$1 20	
One Copper Oxide Plate (capacity one charge).....	40	
One Zinc Plate (capacity one charge) .....	47	
Can containing one charge Caustic Soda .....	25	
Bottle Heavy Paraffine Oil (one charge).....	09	
<b>*2924/1—Ditto, ditto, Type "Q,"</b> for small fan motor and gas engine; capacity 150 Ampere-Hours; with porcelain jar .....		3 67
Complete Renewal for this battery .....	\$1 37	
Two Zinc Plates (capacity one charge), each 24cts.....	48	
One Copper Oxide Plate (capacity one charge).....	52	
Can containing one charge Caustic Soda.....	29	
Bottle Heavy Paraffine Oil (one charge) .....	10	



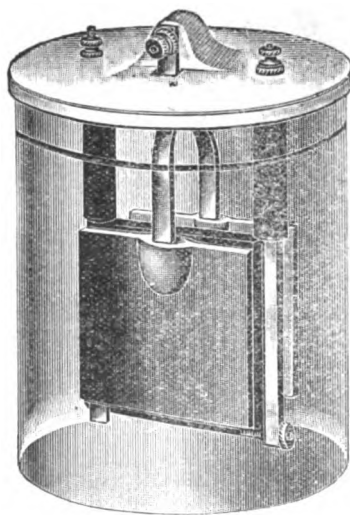
2924/1



2924



2924/3



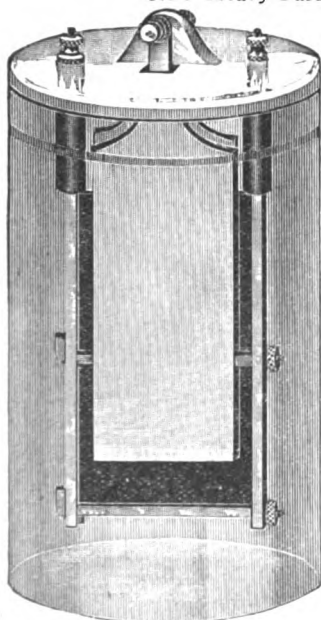
2924/2

<b>*2924/2—Ditto, ditto, Type "RR,"</b> for gas engines and R. R. crossing signal; capacity 300 Ampere-Hours; with porcelain jar.....		4 84
with glass jar.....		4 67
Complete Renewal for this battery .....	\$2 34	
Two Zinc Plates (capacity one charge), each 42cts.....	84	
One Copper Plate (capacity one charge).....	92	
Can containing one charge Caustic Soda .....	47	
Bottle Heavy Paraffine Oil, one charge.....	12	
<b>*2924/3—Ditto, ditto, Type "S,"</b> for fan motor and phonograph; capacity 300 Ampere-Hours; with porcelain jar .....		5 00
Complete Renewal for this battery .....	\$2 44	
Two Zinc Plates (capacity one charge), each 42cts .....	84	
Two Copper Oxide Plates (capacity one charge), each 52cts.....	1 04	
Can containing one charge Caustic Soda .....	47	
Bottle Heavy Paraffine Oil, one charge.....	10	

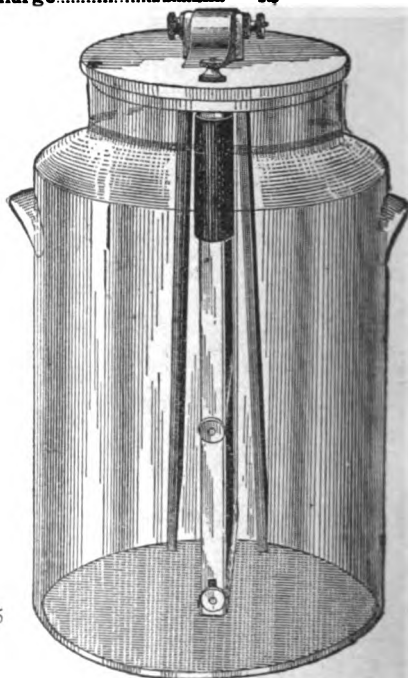
- \*2924/4—**Battery, Edison Primary, Type "SS,"** for R. R. Semaphore Signal; capacity 300 Ampere-Hours; with porcelain jar..... \$ 5 42  
with glass jar..... 5 00

Prices of Complete Renewal and Parts same as No. 2924/3.

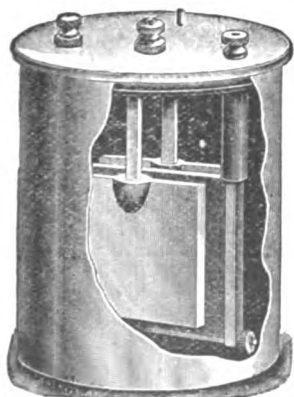
- \*2924/5—Ditto, ditto. **Type "W,"** Cautery and Dental Motor Model; capacity 600 Ampere-Hours; with porcelain jar..... 8 09  
Complete Renewal for this battery..... \$4 20  
Two Zinc Plates (capacity one charge); each 69cts..... 1 38  
Two Copper Oxide Plates (capacity one charge); each 92cts..... 1 84  
Can containing one charge Caustic Soda..... 87  
Bottle Heavy Paraffine Oil, one charge..... 14



2924/4



2924/5



2924/7



2924/6

- \*2924/6—Ditto, ditto. **Type "Z,"** for Launches and Portable Engines (Small Launch and Traction Gas Engine Model); capacity 100 Ampere-Hours; with liquid-tight steel enameled jar..... 3 33

Prices of Complete Renewals and Parts same as No. 2924.

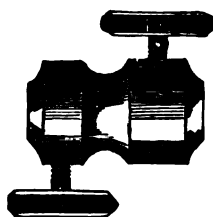
- \*2924/7—Ditto, ditto. **Type "V,"** for Launches and Portable Engines (Launch and Traction Gas Engine Model); capacity 150 Ampere-Hours; with liquid-tight steel enameled jar..... 4 17  
With porcelain jar, but without Rubber Gasket Ring..... 3 67  
Complete Renewal for this battery..... \$1 49  
One Copper Oxide Plate (capacity one charge)..... 52  
One Zinc Plate (capacity one charge)..... 59  
Can containing one charge Caustic Soda..... 29  
Bottle Heavy Paraffine Oil, one charge..... 10

REMEMBER OUR DISCOUNT.

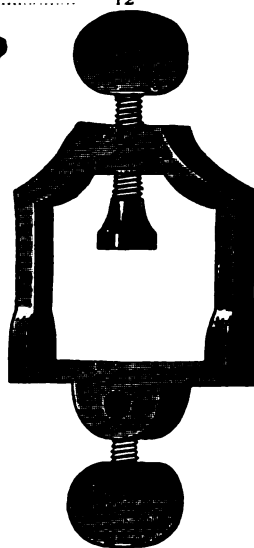
- \*2924/8—Battery, Edison Primary, Type "AA," for launches and portable engines (Large Launch and Traction Engine Model), capacity 300 Ampere-Hours; with liquid-tight steel enameled jar ..... \$ 5 84  
 With porcelain jar, but without Rubber Gasket Ring ..... 4 84  
 Complete Renewal for this battery ..... \$2 42  
 One Copper Oxide Plate (capacity one charge) ..... 92  
 One Zinc Plate (capacity one charge) ..... 92  
 Can containing one charge Caustic Soda ..... 47  
 Bottle Heavy Paraffine Oil, one charge ..... 12



2924/8



2931



2936



2930



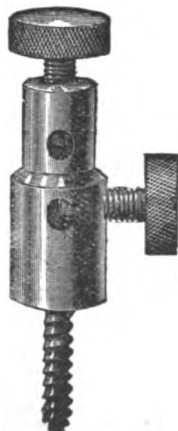
2932



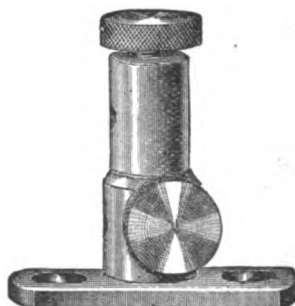
2932/1



2933



2934



2935

\*2930—Battery-Connections, Binding Screws, single. Plain. Finished.

Each,	\$0 13	0 15
Per doz.,	1 20	1 50
Each,	\$0 17	0 20
Per doz.,	1 80	2 10

\*2931—Ditto, ditto, double.

\*2932—Battery-Connections, Connector for Zinc, called Binding Post; each, \$0 20; per doz.....

2 15

\*2932/1—Ditto, Binding Post, for two wires; each, \$0 25; per doz.....

2 70

\*2933—Ditto, Binding Post, with Wood Screw, for one wire; each, \$0 20; per doz.....

2 00

\*2934—Ditto, Binding Post, with Wood Screw, for two wires; each, \$0 30; per doz.....

3 25

\*2935—Ditto, Binding Post, for two wires; each, \$0 50; per doz.....

5 40

\*2936—Ditto, Carbon Clamp, platinum faced, for Carbon Battery No. 1

55

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*2936/1—Battery Connections; Carbon Clamp, for Carbon Battery No. 2, with platinum faced connector, not shown on illustration..... \$ 1 00  
 Batteries and Apparatus, for Silver-plating, Nickel-plating, etc., of any description and capacity furnished to order at lowest prices. Full instructions will be given with every Apparatus, if desired.

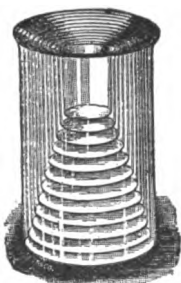
**ALL OUR BEAKERS ARE OF BEST BOHEMIAN MAKE, OF HIGH GRADE RESISTANCE GLASS.**

- \*2940—Beakers, of best Bohemian Glass, of uniform thickness and usual form, without lip.

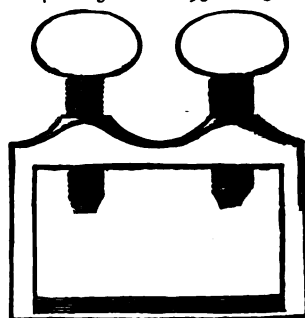
Nest of 3—No. 000 to 0;	approximate capacity,	25 to 50 cc.....	25
Nest of 3—No. 1 to 3;	approximate capacity,	90 to 225 cc.....	44
Nest of 4—No. 1 to 4;	approximate capacity,	90 to 325 cc.....	69
Nest of 5—No. 1 to 5;	approximate capacity,	90 to 475 cc.....	87
Nest of 6—No. 0 to 5;	approximate capacity,	50 to 475 cc.....	1 00
Nest of 6—No. 1 to 6;	approximate capacity,	90 to 700 cc.....	1 25
Nest of 8—No. 00 to 6;	approximate capacity,	35 to 700 cc.....	1 50
Nest of 8—No. 1 to 8;	approximate capacity,	90 to 1250 cc.....	2 00
Nest of 10—No. 00 to 8;	approximate capacity,	35 to 1250 cc.....	2 25
Nest of 11—No. 000 to 8;	approximate capacity,	25 to 1250 cc.....	2 33
Nest of 10—No. 1 to 10;	approximate capacity,	90 to 2400 cc.....	3 55
Nest of 12—No. 00 to 10;	approximate capacity,	35 to 2400 cc.....	3 75
Nest of 12—No. 1 to 12;	approximate capacity,	90 to 4350 cc.....	4 30
Nest of 15—No. 000 to 12;	approximate capacity,	25 to 4350 cc.....	4 55
Nest of 7—No. 6 to 12;	approximate capacity,	700 to 4350 cc.....	3 45

Approximate capacity, 25 35 50 90 140 225 325 475 700 900 1250 1750 2400 3350 4350 cc.  
 Each, \$0 08 10 12 14 16 21 27 31 37 40 48 65 80 95 1 15

REMEMBER OUR DISCOUNT.



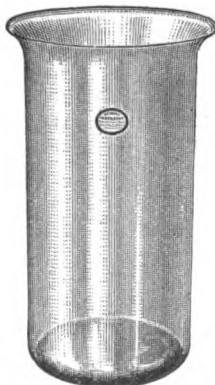
2940 &amp; 2940/1



2936/1



2942



2942



2942

- \*2940/1—Beakers, of Jena Normal Glass, usual form, without lip.  
 Approximate capacity, 50 100 150 200 300 400 500 600 800 1000 1300 cc.  
 Each, \$0 21 25 27 31 40 47 50 55 58 67 75

\*\*2942—**BEAKERS, OF HENRY HEIL CHEMICAL CO'S BOHEMIAN NORMAL GLASS, USUAL FORM,** superior in shape and quality to any other beakers. Each beaker bears our trade-mark.  
 (For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approximate capacity,	25	35	50	90	140	225	325	475	700 cc.
Each,	\$0 17	17	17	19	21	27	34	40	46
Approximate capacity,	900	1250	1750	2400	3350	4350 cc.			
Each,	\$0 50	60	70	87	1 10	1 25			

**\*2950—Beakers, of best Bohemian Glass, of uniform thickness; Griffin's form, with lip.**

Nest of 3—No. 000 to 0; approximate capacity, 25 to 100 cc.....	\$ 31
Nest of 3—No. 1 to 3; approximate capacity, 150 to 375 cc.....	62
Nest of 4—No. 1 to 4; approximate capacity, 150 to 600 cc.....	1 00
Nest of 5—No. 1 to 5; approximate capacity, 150 to 800 cc.....	1 35
Nest of 6—No. 1 to 6; approximate capacity, 150 to 1100 cc.....	1 85
Nest of 8—No. 1 to 8; approximate capacity, 150 to 2000 cc.....	3 10
Nest of 10—No. 1 to 10; approximate capacity, 150 to 3400 cc.....	5 00
Nest of 12—No. 1 to 12; approximate capacity, 150 to 5700 cc.....	6 25
Nest of 15—No. 000 to 12; approximate capacity, 25 to 5700 cc.....	6 55

No. 000 00 0 1 2 3 4 5 6 7 8 9 10 11 12

**Approximate**

capacity, 25 50 100 150 250 375 600 800 1100 1500 2000 2600 3400 4300 5700 cc.

Each, \$0 10 12 13 16 22 30 35 45 55 72 85 92 1 04 1 16 1 32

**\*2950/1—Beakers, of Jena Normal Glass, Griffin's form, with lip.**

Approximate capacity, 50 100 150 250 400 600 800 1000 1300 cc.	
Each, \$0 23 25 27 32 46 53 63 71 85	

**2951—Beakers, of best Bohemian Glass, wide form like Griffin's Beakers, but without lip.**

Nest of 3—No. 1 to 3	Approximate capacity, 150 to 375cc.	62
Nest of 4—No. 1 to 4	Approximate capacity, 150 to 600cc.	1 05

Approximate Capacity	No. 1 2 3 4	135 250 350 450 cc.
Each		\$0 18 0 24 0 33 0 40



2950 &amp; 2950/1



2952



2952



2960



2952

**\*\*2952—BEAKERS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, GRIFFIN'S FORM, WITH LIP.** Superior in shape and quality to any other beakers. Each beaker bears our trade-mark. (For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approximate capacity,	25 50 100 150 250 375 600 800 1100 cc.
Each,	\$0 18 19 20 21 26 35 44 55 65
Approximate capacity,	1500 2000 2600 3400 4300 5700 cc.
Each,	\$0 90 1 05 1 15 1 30 1 45 1 65

**\*2955—Beakers, of best Bohemian Glass, extra tall form, of uniform thickness. (Illustr. p. 140)**

Nest of 3—No. 1 to 3	Approximate capacity, 180 to 450cc	70
Nest of 4—No. 1 to 4	Approximate capacity, 180 to 650cc	1 05
Nest of 6—No. 1 to 6	Approximate capacity, 180 to 1425cc	1 85
Nest of 8—No. 1 to 8	Approximate capacity, 180 to 2600cc	3 00

**2956—Beakers, if provided with ground labels, for writing on same with a pencil; each additional.....**

15

**\*2960—Beakers, of best Bohemian light glass, Erlenmeyer's (Beaker Flasks).**

Approximate Capacity	30cc 60cc 125cc 250cc 500cc 1 lit. 2 lit. 4 lit.
Each,	\$0 15 0 18 0 25 0 30 0 37 0 55 0 95 1 50

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.;  
 1 quart=1000 cc.; 1 gallon=360 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*\*2962—BEAKERS, ERLLENMEYER FORM (Beaker Flasks), with lip, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, superior in shape and quality to any other make. Each beaker bears our trade-mark.**

(For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approximate capacity,	35	70	150	250	500	1000	2000	4000 cc.
Each,	\$0 20	25	30	40	50	70	1 25	2 00

\*2970—Ditto, of Berlin porcelain.

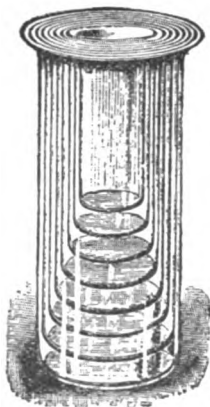
Approximate Capacity	200	350	500cc
Each,	\$0 55	0 70	1 05

\*2980—Beakers, of thin copper, with lip (Griffin's form.)

	125	250	500	1000cc.
Each,	\$0 90	1 00	1 20	1 55

\*2981—Ditto, ditto, nickel-plated, for sugar analysis.

	125	250	500	1000cc.
Each,	\$1 15	1 25	1 50	1 90



2955



2962



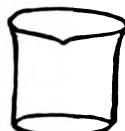
2962



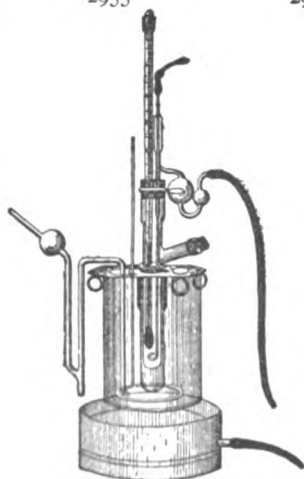
2970



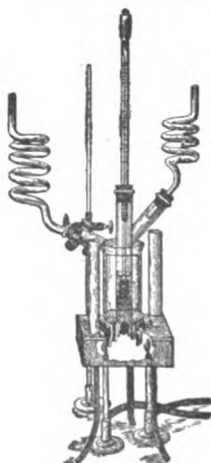
2983 &amp; 2983/1



2980 &amp; 2981



2982



2982/2



2982/1



\*I 2982—Beckmann's Molecular Weight Determination Apparatus, for the freezing method. Complete with finest standard thermometer, divided in 1/100°

\*2982/1—Ditto, for the boiling point method. Complete with finest standard thermometer, divided in 1/100°

\*2982/2—Ditto, for the boiling point method, older model. Complete with finest standard thermometer, divided in 1/100°

\*2983—Bee-hive Shelves, of japanned zinc

\*2983/1—Ditto, of porcelain

\$ 40 00

52 50

46 85

45

65

REMEMBER OUR DISCOUNT.

**\*2985—Bells, Electric (Electric Call Bells), boxed.**

Bell.....	63 mm.	75 mm.	100 mm.
Each .....	\$1 00	1 25	1 50

**\*2987—Bellglasses, with reservoir, bacterioscopical, without knob; top part fitting over reservoir. Petri Dishes.**

Diam. of top part, 4	5	6	8	10	12	15	18	20	22 cm.
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Each, \$0 17 0 19 0 23 0 25 0 31 0 44 0 62 1 00 1 35 1 85

**\*2988—Ditto, same as Petri Dishes No. 2987, but lighter and shallower, called Pasteur Dishes; diameter 10 cm., depth of lower dish  $\frac{1}{4}$  cm.; each**

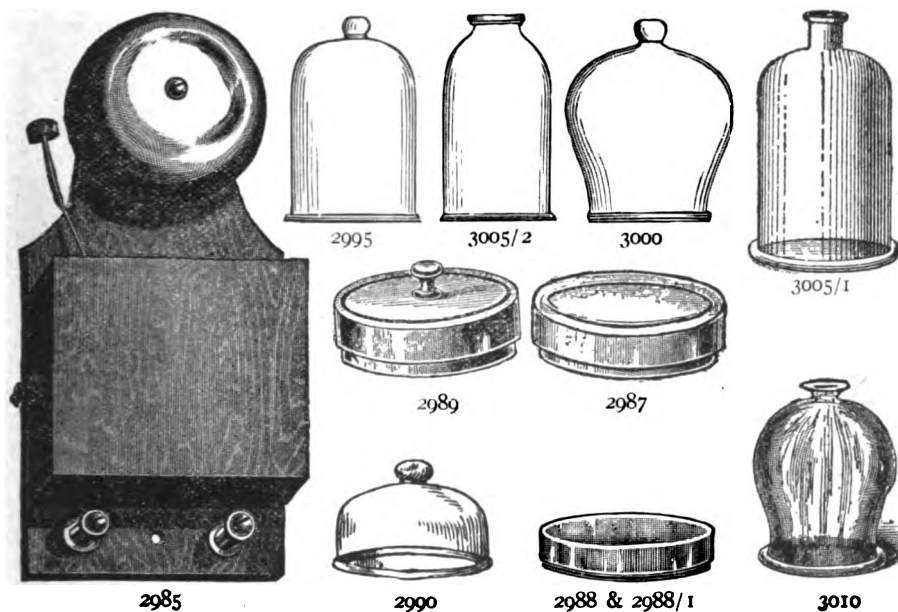
\$ 0 31

**\*2988/1—Ditto, same as No. 2988. Diameter 10 cm., depth of lower dish 1 cm.; each**

31

**\*2989—Bellglass, with reservoir, bacterioscopical, knob top, top part fitting over reservoir; diameter, 23 cm.; height, 6 cm. to 7 cm.; each**

2 00



APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

**\*2990—Bellglasses, with knob top, heavy rim, accurately ground, low form.**

Diameter	7.5	10	13	15	20	25	30	40 cm.
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Each, \$0 65 0 75 0 75 1 15 1 30 1 95 2 70 3 75 6 50

**\*2995—Ditto, ditto, tall form.**

Approximate Capacity, 250cc. 500cc. 1 lit. 2 lit. 4 lit. 8 lit. 12 lit. 20 lit.

\$0 35 0 37 0 75 0 85 1 15 1 85 3 25 6 25

**\*3000—Ditto, ditto, swelled form.**

Approximate Capacity, 1 lit. 2 lit. 4 lit. 8 lit.

\$0 75 88 1 05 1 17 1 40 1 60 2 25

**\*3005/1—Ditto, with open narrow top, tall form.**

Approximate capacity, 500 cc. 1 lit. 2 lit. 4 lit. 8 lit. 12 lit. 20 lit.

\$0 57 66 0 75 88 0 85 1 17 1 25 1 60 1 85 2 25 3 50 6 10 6 75

**\*3005/2—Ditto, with open wide top, tall form.**

Approximate capacity, 500 cc. 1 lit. 2 lit. 4 lit. 8 lit. 12 lit. 20 lit.

\$0 57 66 0 80 88 0 90 1 17 1 20 1 60 1 90 2 25 3 50 6 25 6 75

**3006—Ditto, ditto, graduated, from \$1 25 to \$3 75 extra, according to size and graduation.****\*3010—Ditto, with open narrow top, swelled form.**

Approximate Capacity, 1 lit. 2 lit. 4 lit. 8 lit.

\$0 85 88 1 15 1 17 1 55 1 60 2 50 2 25

\*3015 Bellglasses, with ground glass stoppers, tall form.

Approximate Capacity. 250 cc. 500 cc. 1 lit. 2 lit. 4 lit. 8 lit. 12 lit. 20 lit.  
\$0 75 80 ~~90 45~~ 1 25 1 75 3 10 4 50 \$ ~~6 75~~ 7 11

\*3020—Ditto, with fine ground glass stop-cock, tall form.

Diameter, 10 13 15 cm.  
Height, 23 33 38 cm.  
\$3 25 5 50 6 70

\*3021—Bellglasses, with double walls, for physiological work, Sach's, for observing the effect of rays through different colored liquids on plants.

Each 30 x 12 cm. 40 x 15 cm.  
\$7 00 8 75

\*3025—Ditto, small, of light glass, with dish, for analytical use

0 75

\*3026—Ditto, small, of light glass, with glass plate, for analytical use

60

\*3031—Ditto, tall form, fitted with brass stop-cock.

Approximate Capacity, 500 cc. 1 lit. 2 lit. 4 lit. 8 lit.  
\$2 05 2 25 2 50 2 95 3 85

3035—Ditto, with open top and tubulature near bottom, ground air-tight to a glass plate, 2 lit. capacity, for Bunsen's filter pump

2 45

\*3035 I—Ditto, ditto, 2 lit. capacity, without glass plate

1 20

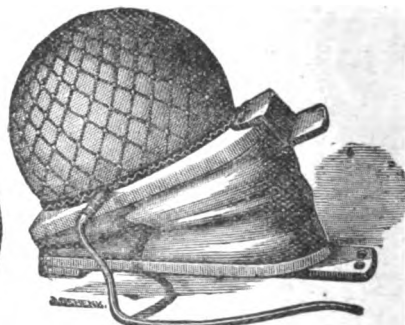
REMEMBER OUR DISCOUNT.



3055



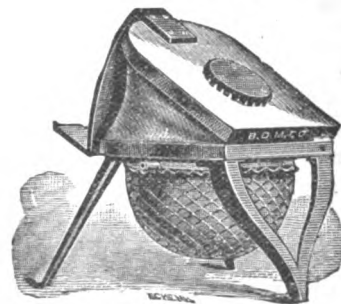
3050



3060—No. 9



3015



3060—No. 10



3020



3035/I



3031



3021



3025



3026

\*3050—Bellows, Hand

1 00

\*3055—Bellows, of India Rubber, with netting, to be used with blow-pipe or for other purposes, when a small blast is required

1 90

\*3060—Ditto, Fletcher's Foot Blowers. The pressure produced by these blowers is perfectly steady and equal. They will give, if required, a heavy and continuous blast through a pipe of 6 mm. clear bore.

No. 9 9a 10 10a 10b  
\$0 00 7 50 10 50 7 50 9 00 12 00

Extra rubber disks for No. 9 & 10 9a & 10a 9b & 10b  
\$0 75 1 10 1 50

Extra Nets

55



3067—Belting, Rubber Machine, all grades of first quality, 2, 3, 4, 5 and 6 ply. At lowest prices.

3070—Bladders, or Rubber Bags.

No. 3. (1.4 lit) ..... \$ 0 75. No. 4. (1.9 lit)..... \$ 1 00

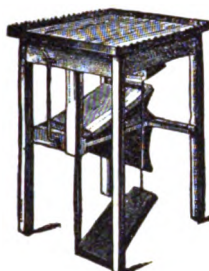
\*3071—Ditto, ditto, with brass stop-cock and socket, for gas experiments.  
1.4 lit ..... \$2 25. 1.9 lit ..... 2 50

\*I 3080—Blast Table, German glass-blowers' style..... 40 00

\*I 3081—Ditto, improved French pattern, complete..... 57 00



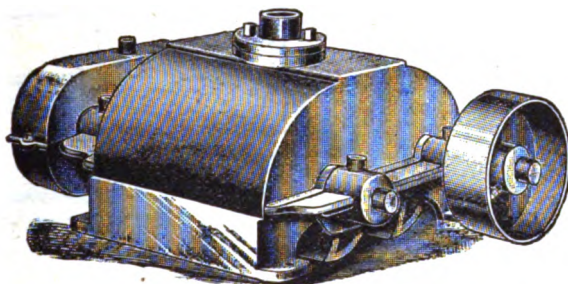
3071



3080



3081



3085

\*3085—Blower, Root's Positive Pressure Blower. The revolvers are enclosed in an iron case, which is bored out perfectly true. The revolvers are of iron and are constructed on an entirely new principle, and are dressed so that they will keep up perfect and continuous contact with each other and the case during the entire revolution, thus forcing forward and utilizing all the air taken into the case. The shafting is steel of the best quality. The bearings are of anti-friction metal, arranged so that they can be easily renewed in a short time. The oiling arrangements are perfect. The gears are cut in the most accurate manner, and are inclosed in oil-tight housing and run constantly in oil, and the wear is reduced to the minimum. The blower is driven by power, and the speed is multiplied by cut gears. The different parts are all made to standard size, and any part may be duplicated.

We recommend this Blower where a heavy blast is required and power is available, as the advantage of the positive Blower, or the superiority of the positive blast over the non-positive fan blast, is apparent. The positive Blower is the only one that can be controlled to furnish the exact amount of air needed, and is the only one that can produce the conditions that are absolutely necessary to effect perfect combustion.

With a fan, however, the case is different; there is nothing positive in its operation, and the results can never be relied upon, as they are varied by every contingency that varies the resistance.

It is quite important that the journals and gears should be kept properly lubricated, and not be allowed to heat, wear, or cut, as all the friction and wear is confined to these two places alone.

The speed at which the Blower should be run should not exceed 400 revolutions.

Root's  $\frac{1}{4}$  B. S. Positive Pressure Blower.....

33 30

APPROXIMATE EQUIVALENTS:  
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

**\*3090—Blow-pipes, Jeweler's brass, plain.**

	20 cm.	23 cm.	25 cm.	30 cm.
Each.....	\$ 0 13	14	15	18
Doz.....	1 20	1 35	1 50	1 80
Gross.....	13 20	14 85	16 50	19 80

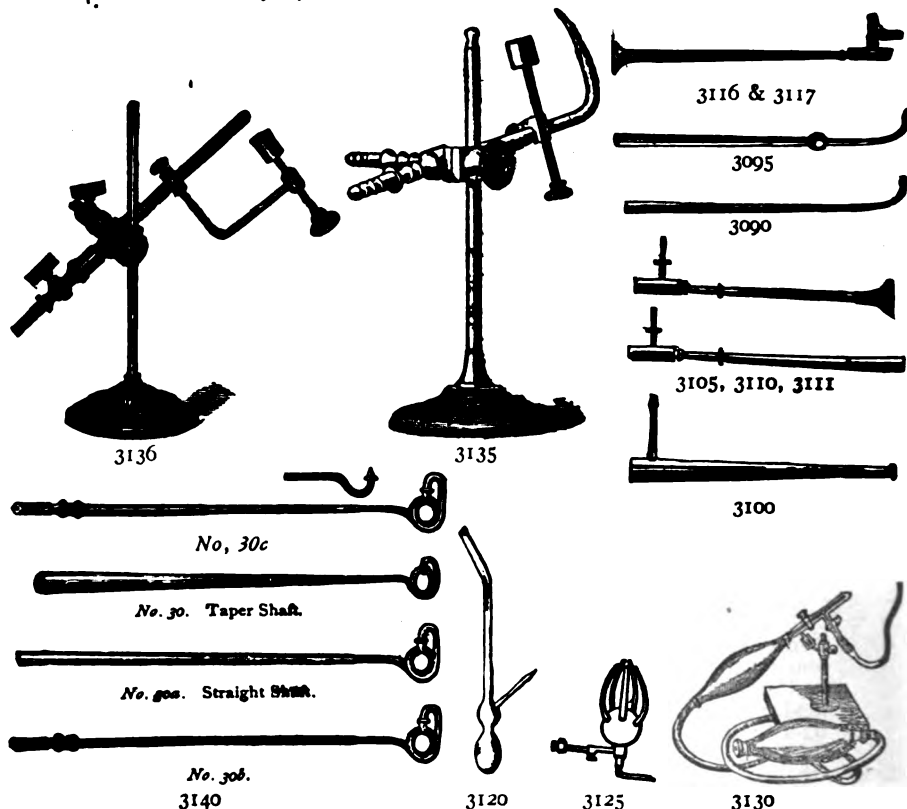
**\*3095—Ditto, ditto, with bulb.**

	20 cm.	23 cm.	25 cm.	30 cm.
Each.....	\$ 0 27	28	30	33
Doz.....	2 65	2 75	2 95	3 35

**\*3100—Ditto, Black's, of Japanned tin, with movable brass jet.**

	Each.	Per doz.	Per gross.
	\$0 31	3 60	36 00
Extra brass jets,	12	94	9 00

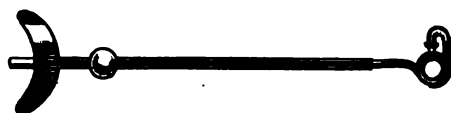
REMEMBER OUR DISCOUNT.

**\*3105—Ditto, Plattner's, nickel-plated, with trumpet-shaped or cylindrical mouth-piece, without platinum jet.....****\$ 1 55****\*3110—Ditto, Plattner's, nickel-plated, with trumpet-shaped or cylindrical mouth-piece, with soldered platinum plate, fig. 3105.....****1 75****\*3111—Ditto, ditto, with solid platinum jet.....****2 80****Extra solid platinum jet.....****1 25****\*3116—Ditto, ditto, with blast attachment for gas.....****2 65****\*3117—Ditto, ditto, ditto, with solid platinum jet.....****3 90****\*3120—Ditto, of glass, with bulb.....****40****\*3125—Ditto, Plattner's Spinne, of brass, having 5 jets with one reservoir, to be used in connection with Rose's lamp and bellows, to produce a high heat.....****6 25****\*3130—Ditto, Plattner's, mounted on stand, with rubber bellows and reservoir.....****11 25****\*3135—Ditto, Oxy-hydrogen, mounted on stand, with universal movement and movable lime holder.....****6 90****\*3136—Ditto, with two stop-cocks.....****9 35****\*3140—Blow-pipes, Fletcher's hot blast mouth.**

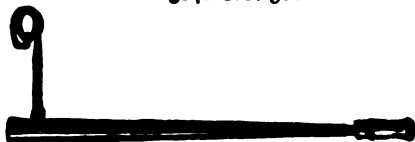
No. 30.	30a	30b.
\$1 03	87	1 19

**No. 30c (with hot and cold blast jet).....****1 58****No. 30f, with moisture bulb and metal mouth-piece, nickel-plated (Illustr. p. 145).....****2 53**

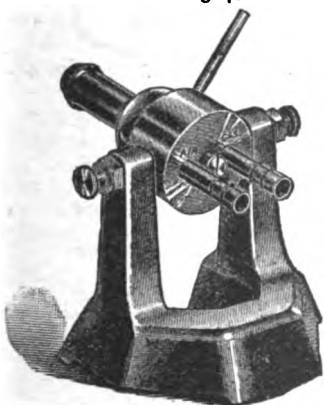
*3141— <b>Blow-pipe</b> , Fletcher's hot blast chemical, No. 31.....	\$ 1 98
*3145—Ditto, Fletcher's Automaton, No. 6A, is as perfect in its way as the Injector Furnace, combining in the simplest possible form every quality essential to a perfect blow-pipe. The blow-pipe is mounted on a stand, with a uniform ball joint, so as to enable it to be used at any angle or in any position. It has all the delicacy of the best mouth blow-pipe used with the utmost skill, with the power and advantages obtained with a mechanical blower. For jets not exceeding 3 mm. bore, complete with one jet.....	6 35
Extra jet.....	10
No. 6 Automaton Blow-pipe requires Foot Blower, No. 9A. or 10A.	
*3150— <b>Blow-pipe</b> , Fletcher's Automaton Hand, No. 6B, a very convenient blow-pipe for small work, brazing, annealing, etc.....	5 55
Extra jet.....	16
3151—Ditto, ditto, No. 6C (fig. 3150).....	7 90
*3152— <b>Blow-pipe</b> , Fletcher's Automaton Hand Blow-pipe on Standard, No. 6D and No. 6E. The Standard shown in the engraving is adapted to either Nos. 3150 and 3151. The operator is thus enabled to use the blow-pipe on the table, in the same manner as No. 3145. The swivel gives even greater latitude of adjustment than No. 3145 is capable of, while the blow-pipe is easily detached and capable of use in the hand.	
No. 6D. Automaton 6B on Standard.....	6 35
No. 6E. Automaton 6C on Standard.....	8 70



3140 No. 30F



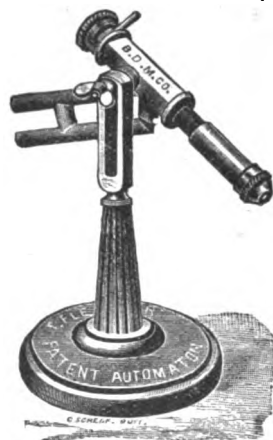
3141



3154



3145



3152



3150

3153—**Blow-pipe**, Fletcher's Automaton No. 6F. For light soldering, etc. It is an improved smaller pattern of No. 3150, the end being bent at an angle to give greater facility in directing the flame, and the length being increased, the hand is further removed from the flame.....

3 00

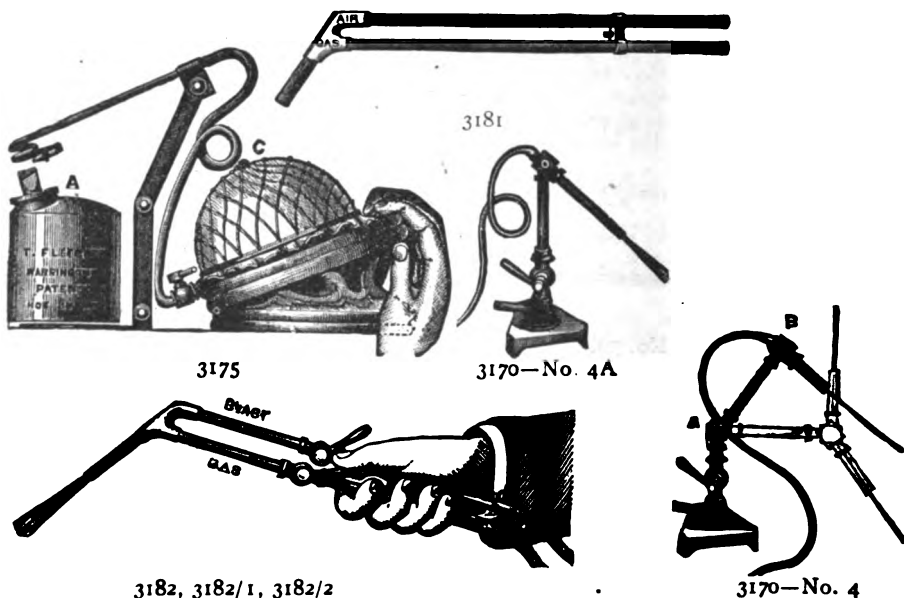
\*3154—**Blow-pipe**, Fletcher's compound Blow-pipe, No. 20, for glass-workers and experimental laboratories. This is a double concentric blow-pipe, which has an inner air-jet, a middle tube, which may be used either for air or gas, and an external gas tube. The gas and air are changed automatically from the larger to the smaller blow-pipes by a slight movement of the lever at the back, the same movement also adjusting both gas and air to each other for each blow-pipe. The combination of two blow-pipes in this manner gives a great range of power, from a delicate pointed jet, to a brush flame using 35 ft., (= 1 cubic meter) per hour.....

15 85

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*3170—**Blow-pipe**, Fletcher's Improved Herapath. For general use. The jet-tube may be raised or lowered to any height and turned in any direction.

No. 4.....	\$ 5 95
No. 4A, single joint.....	4 75
With Fletcher's new mouth-piece, <b>extra</b> .....	95
*3175—Ditto, Fletcher's Special Chemical, No. 32B, with folding stand and hand-bellows, in case, without lamp.....	6 35
The lamp, <b>extra</b> .....	1 20
The lamp, nickel-plated, <b>extra</b> .....	1 60
The hand-bellows (called No. 9½) alone, with spare rubber disc, without blow-pipe.....	5 15



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\*3181—**Blow-pipe, Fletcher's Brazing**. For use in the hand for brazing work requiring great heating power. The air-tube is 4.7 mm. and the gas-tube 11 mm., requiring the use of a foot-blower. Without stop-cock. Each \$2 30; Per doz.....

\*3182—Ditto, ditto; air-tube 4.7 mm., gas-tube 11 mm.; **with two lever stop-cocks**. Each \$3 30; Per doz.....

\*3182/1—Ditto, ditto; air-tube 8 mm., gas-tube 16 mm.; **with two lever stop-cocks**. Each \$4 65; Per doz.....

\*3182/2—Ditto, ditto; air-tube 13 mm., gas-tube 25 mm.; **with two lever stop-cocks**. Each \$5 65; Per doz.....

\*3183—**Blow-pipe. For Gasoline Gas. Non-Extinguishable, No. 6 G**—This blow-pipe exclusively used for gasoline gas, as produced by our generators, has been improved by the substitution for the ordinary air and gas outlet tubes, of a concentrating chamber surrounding the air jet, and a deflecting sleeve covering both gas and air outlets. This arrangement prevents the extinguishing of the flame at a critical moment, by over-pressure or any other cause.

A new method of regulating the size of the flame has been adopted, which requires a simple partial rotation of the controlling valve to produce a fine, pointed flame, up to 25, 50 or 75 mm. long. The large brush flame is obtained by depressing the valve stem.

The No. 6G blow-pipe is used exclusively with the No. 40c (as shown under No. 5681) and No. 45 Gasoline Gas Generators (No. 5795) and is intended for light soldering and melting only.

**No. 6G, Gasoline Gas Blow-pipe** (Illustr. p. 147).....

\*3183/1—**Stand for same**, so arranged that the Blow-pipe can be raised or lowered a distance of 5 cm., and by means of a clamp secured by a thumb-nut the blow-pipe can be placed at any desired angle (Illustr. p. 147).....

3 95

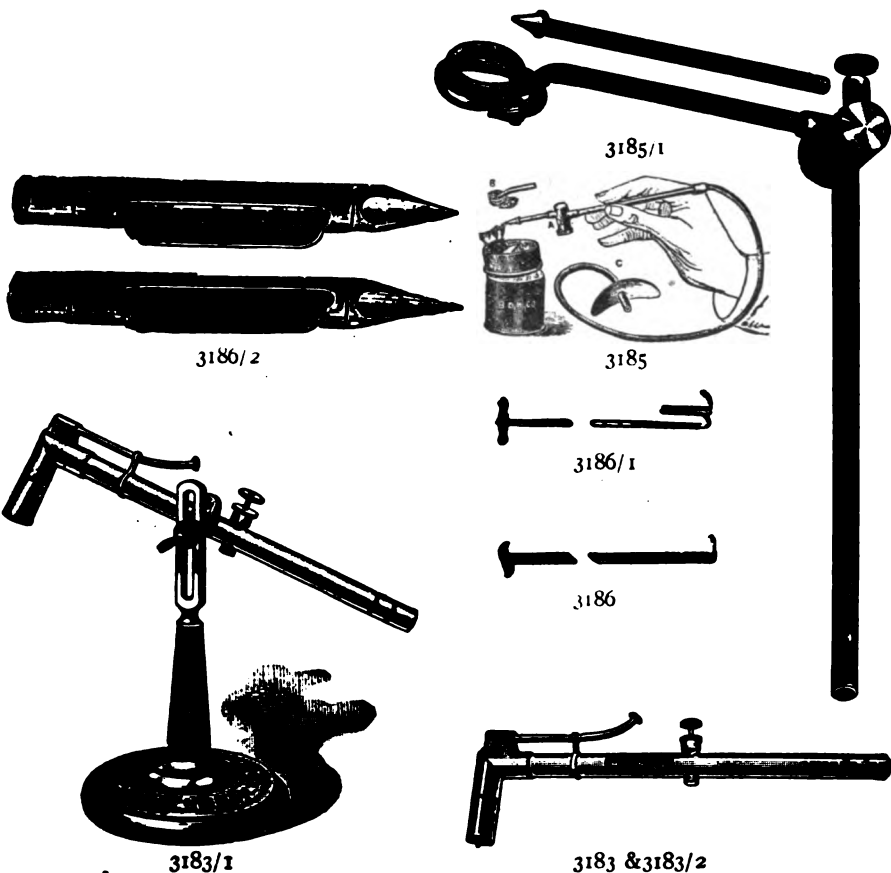
1 60

**\*3183/2—Blow-pipe. For Natural Gas, Non-Extinguishable No. 6 H.****INSTRUCTIONS:**

This blow-pipe exclusively used for **natural gas**, has been improved by the substitution for the ordinary air and gas outlet tubes, of a concentrating chamber surrounding the air-jet, and a deflecting sleeve covering both gas and air outlets. This arrangement prevents the extinguishing of the flame at a critical moment, by over-pressure or any other cause. The size of the flame is regulated by a simple partial rotation of the controlling valve which produces a fine pointed flame, up to 25, 50 or 75 mm. long. The large brush flame is obtained by depressing the valve stem.....

- \*3185—Ditto, Fletcher's New Patent, No. 42.** With both cold and hot blast, two jets and nickel-plated mouth-piece, in case.....

\$ 3 95  
2 35



**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*3185/1—Ditto, Fletcher's Blow-pipe, No. 42A.**—Improvement suggested by Prof. W. T. LANDER, Williamston, S. C. The improvement consists of having two hubs on the moisture chamber, placed at right angles to each other, by which means the blow-pipe can be used in the original parallel form, or the jet can be changed so as to be at right angles to the stem if desired.

No. 42A. Fletcher's Blow-pipe, with Lander's improvement, with cold blast and hot blast, two jets, nickel-plated mouth-piece.....

2 77  
95

- \*I 3186—Borers, for soils, according to Orth, of best steel, 11 mm. diameter.** Borer 80 cm. long.....

13 50

- \*I 3186/1—Ditto, according to Gruner, with anvil and detachable handle.**

Length of boring rod 1 1.5 2 Meters.

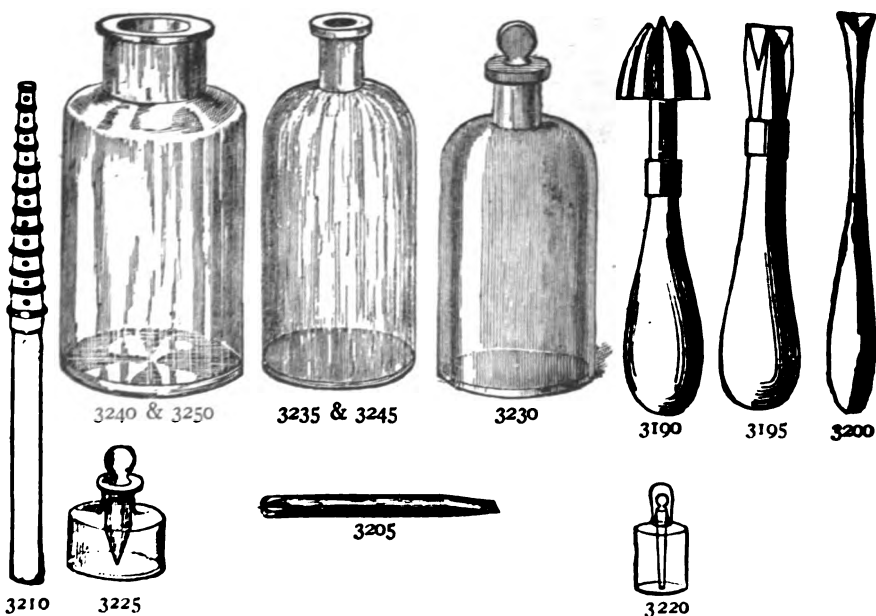
\$15 30 19 80 20 70

- \*I 3186/2—Ditto, according to Fraenkel, for obtaining soil samples for bacteriological examinations.....**

27 00

*3190—Borer, Charcoal, club-shaped, hard steel, fine finish, with wooden handle.....	\$ 0 80	
*3195—Ditto, ditto, square, with wooden handle.....	54	
*3200—Ditto, ditto, of polished steel, with spatula.....	62	
*3205—Ditto, ditto, with chisel-edged magnet.....	55	
*3210—Borers, for Corks, of polished brass, 15 cm. long, best German make. These cork borers are superior to those sold by the trade.		
Set of 3—No. 1 to 3.....	0 80	
Set of 6—No. 1 to 6.....	1 33	
Set of 12—No. 1 to 12.....	2 66	
Set of 15—No. 1 to 15.....	3 90	
Set of 3—No. 4 to 6.....	95	
*3220—Bottles, Acid (Cobalt Bottles), with long stopper and ground cap.		
15 cc.....	30 cc.....	60 cc.....
\$0 37.....	0 43.....	0 50.....
*3225—Ditto, Acid (Coin Test Bottles), with long stopper.		
30 cc.....	60 cc.....	
\$0 50.....	0 55.....	

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\*3230—Ditto, for Acid, of heavy green glass, with accurately ground glass stoppers.

<b>Approximate Capacity</b>	250 cc =8 oz.	500 cc pt.	1 lit. qt.	2.375 lit. 5 pts.	} No charge for boxes in original packages.	
In boxes of	6 doz	6 doz	6 doz	3 doz.		
Each	\$0 20	0 24	0 31	0 42		
Per doz	2 05	2 40	3 10	5 00		
*3235—Ditto, of green glass, narrow mouth, round shoulder.						
<b>Approximate Capacity</b>	500 cc =pt.	1 lit. qt.	2 lit. ½ gal.	4 lit. 1 gal.	8 lit. 2 gal.	} No charge for boxes in original packages.
In boxes of	6 doz	6 doz	3 doz	1 doz	1 doz.	
Doz	\$0 85	1 80	2 85	4 15	11 70	
Each	0 10	18	27	35	1 00	

No charge for boxes in original packages.

\*3240—Ditto, of green glass, wide mouth, round shoulder.

Approximate Capacity	2 lit. =1/2 gal.	4 lit. gal.	8 liters. 2 gal.
In boxes of	3 doz	1 doz	1 doz.
Per doz	\$3 15	4 30	13 50
Each	0 30	40	1 35

No charge for boxes in original packages.

\*3242—Ditto, Utrate of Magnesia, of flint glass, capacity about 12 oz. (350 cc.); a very strong bottle, (1/2 gross in a box); (Illustr. p. 149)  
Each, \$0 12; per doz., \$1 25; per gross, \$12 55.

**\*3245—Bottles, of flint glass, round shoulder, narrow mouth. (Illustr. p. 148)**

<b>Approximate Capacity</b>	15	30	60	90	125	180	250	350	500	625	750	1000cc.
	= $\frac{1}{4}$	1	2	3	4	6	8	12oz.	pt.	20oz.	24	qt.
In boxes of	5gr.	5gr.	3gr.	2gr.	2gr.	1gr.	1gr.	$\frac{1}{2}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.
Doz.	\$0 29	33	40	45	51	62	73	97	1 26	1 44	1 55	1 88
Gross	3 25	3 60	4 40	5 05	5 70	6 85	8 15	10 75	14 00	15 95	17 25	20 80

**\*3245/1—Bottles, of flint glass, French Square, narrow mouth.**

<b>Approx. Capacity</b>	15	30	60	90	125	180	250	350	500	750	1000 cc.
	= $\frac{1}{4}$	1	2	3	4	6	8	12	16	24	32 oz.
In boxes of	5gr.	5gr.	3gr.	2gr.	2gr.	1gr.	1gr.	$\frac{1}{2}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.
Doz.	\$0 29	33	40	45	51	62	73	97	1 26	1 55	1 88
Gross	3 25	3 60	4 40	5 05	5 70	6 85	8 15	10 75	14 00	17 25	20 80

**\*3245/2—Bottles, of flint glass, Philadelphia Ovals, narrow mouth.**

<b>Approx. Capacity</b>	15	30	60	90	125	180	250	350	500	750	1000cc.
	= $\frac{1}{4}$	1	2	3	4	6	8	12	16	24	32 oz.
In boxes of	5gr.	5gr.	3gr.	2gr.	2gr.	1gr.	1gr.	$\frac{1}{2}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.	$\frac{1}{4}$ gr.
Doz.	\$0 29	33	40	45	51	62	73	97	1 26	1 55	1 88
Gross	3 25	3 60	4 40	5 05	5 70	6 85	8 15	10 75	14 00	17 25	20 80

**\*3250—Ditto, ditto, wide mouth. (Illustr. p. 148)**

<b>Approximate Capacity</b>	15	30	60	125	180	250	350cc.
	= $\frac{1}{4}$ oz.	1oz.	2oz.	4oz.	6oz.	8oz.	12oz.
In boxes of	5gross	5 gross	3 gross	2 gross	1 gross	1 gross	$\frac{1}{2}$ gross
Doz.	\$0 33	35	43	48	68	80	1 03
Gross	3 60	3 90	4 70	5 35	7 50	8 80	11 40

**Approximate Capacity**

	500	625	750	1000cc.
	=1pt.	1 $\frac{1}{4}$ pt.	1 $\frac{1}{2}$ pt.	qt.
In boxes of	$\frac{1}{2}$ gross	$\frac{1}{2}$ gross	$\frac{1}{2}$ gross	$\frac{1}{2}$ gross
Doz.	\$1 32	1 50	1 62	1 93
Gross	14 65	16 60	17 90	21 45

**\*3251—Ditto, ditto, wide mouth, squat shape, called "Morphine Bottles."**

<b>Approximate Capacity</b>	15	30	60	125cc.
	= $\frac{1}{4}$ oz.	1oz.	2oz.	4oz.
In boxes of	5 gross	5 gross	3 gross	2 gross
Doz.	\$0 35	38	46	57
Gross	3 90	4 25	5 05	6 35

No charge for boxes in original packages.

**APPROXIMATE EQUIVALENTS:**

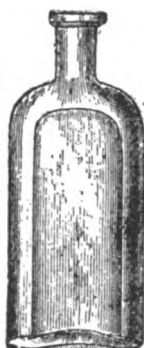
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.



3242



3245/1



3245/2



3251



3260 &amp; 3261

**3252—Ditto, ditto, with extra wide mouth (Insect Bottles), for corks, similar to No. 3251**

<b>Approximate Capacity</b>	50	90	125	180cc.
	=1 $\frac{1}{4}$	3	4	6oz.
For corks, per gross	\$8 20	9 00	11 85	13 70

**3255—Ditto, of black glass, wide mouth, fig. 3240,**

Each	30cc.	60cc.
Doz.	\$0 11	0 13
	1 10	1 30

**\*3260—Bottles, of clearest flint glass, tall cylindrical form, for samples of liquor, oil, etc.**

<b>Approximate Capacity</b>	60cc.	125cc.	180cc.
	=2	4	6oz.
Doz.	\$0 80	1 20	1 60
Gross.	8 50	13 25	17 50

**\*3261—Bottles, of clearest flint glass, heavier, hand made, with cut and polished bottoms. (Illustr. p. 149)**

Approximate capacity,	250 cc.	500 cc.
	= 8 oz.	pt.
Doz.....	\$2 50	3 75

**\*3265—Ditto, of flint glass, Homœopathic.**

Approximate capacity,	2 cc.	3 1/4 cc.	7 1/2 cc.	11 cc.	15 cc.
	= 1/8	1	2	3	4 dr.
Doz.....	\$0 12	13	15	21	30
Short—Gross.....	95	1 05	1 25	1 70	2 50
Long—Gross.....	95	1 05	1 25	1 70	2 50

**\*3266—Ditto, ditto, with ground glass stopper, 4cc; doz., \$0 80; each..... \$0 10**

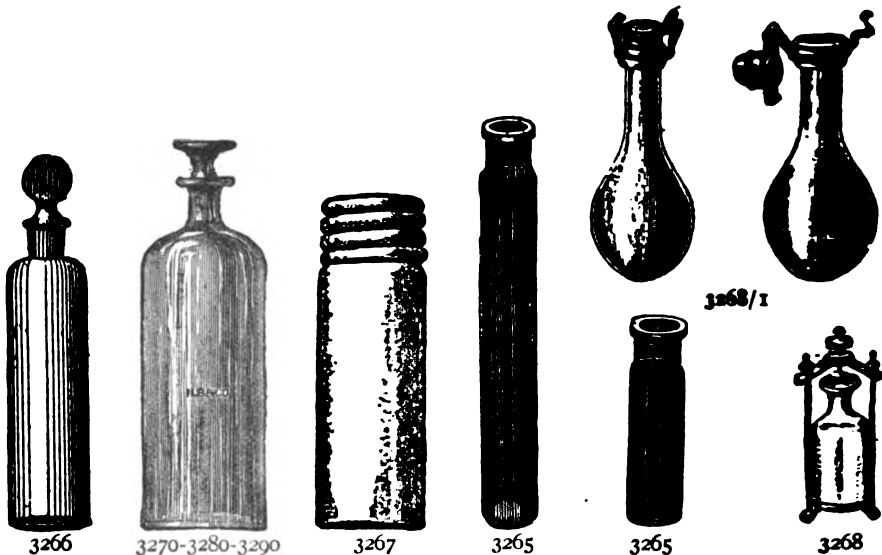
**\*3267—Ditto, ditto, with nickel-plated screw cap, 3 1/4 cc. 7 1/2 cc. 11cc. 15cc 30cc.**

	= 1	2	3	4	8 drs.
Per gross.....	\$3 00	3 75	4 00	5 00	8 00
Per doz. ....	35	45	50	60	95c.

**\*3268—Bottle, Pressure, of stout glass, with screw pressure arrangement, on brass stand; capacity, 125cc. 250cc.**

Each,	\$3 35	3 75
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REMEMBER OUR DISCOUNT.



**\*I 3268/1—Bottle, Pressure, of heavy glass, with patent stopper.**

Capacity.	30	60	100	150	200cc.
Each,	\$0 45	60	75	90	1 12

**3269—Ditto, of flint glass, with ground glass-stoppers, a fine bottle for small quantities of liquid; 15cc. capacity; per doz. .... \$ 1 00**

**\*3270—Ditto, of flint glass, with mushroom stoppers, of handsome and perfect shape. Tinctures.**

	30cc.	60cc.	125cc.	250cc.
=	1	2	4	8 oz.
Doz.	\$1 10	1 25	1 65	2 10

**\*3275—Ditto, ditto, Salt mouth, 30cc. 60cc. 125cc. 250cc.**

(Illustr. p. 151)	= 1	2	4	8 oz.
Doz.	\$1 20	1 35	1 75	2 40

**\*3280—Ditto, ditto, hand made, heavy and elegant and uniform shape and size. Finest ware made. Tinctures.**

Approx. Capacity,	30	60	125	250	500cc.	1 lit.	2 lit.	4 lit.	8 lit.	12 lit.
=	1	2	4	8 oz.	pt.	qt.	1/2 gal.	1 gal.	2 gal.	3 gal.
Doz.	\$1 50	1 80	2 00	2 50	2 75	3 30	6 00	8 85	18 75	32 00
Each,	14	17	18	23	25	30	55	80	1 70	2 95

**\*3285—Ditto, ditto, ditto, Salt mouth. (Illustr. p. 151)**

Approx. Capacity,	30	60	125	250	500cc.	1 lit.	2 lit.	4 lit.	8 lit.	12 lit.
=	1	2	4	8 oz.	pt.	qt.	1/2	1	2	3 gal.
Doz.,	\$1 67	2 00	2 35	3 10	3 40	4 55	7 50	11 25	27 00	38 40
Each,	16	18	22	29	31	41	69	1 03	2 50	3 50



**\*3290—Bottles, of blue glass, with mushroom stoppers, of handsome and perfect shape and uniform size, hand made, Tinctures.** (Illustr. p. 150)

Approximate Capacity,		30cc.	60cc.	125cc.	250cc.	500cc.	1 lit.	2 lit.
=		1	2	4	8 oz.	pt.	qt.	½ gal.
Doz.,	\$1	50	1 80	2 25	3 00	4 50	6 50	10 20
Each,		14	16	21	27	41	60	90

**\*3295—Ditto, ditto, of blue glass, salt mouth.**

Approximate Capacity,		30cc.	60cc.	125cc.	250cc.	500cc.	1 lit.	2 lit.
=		1	2	4	8 oz.	pt.	qt.	½ gal.
Doz.,	\$2	50	2 80	3 75	4 60	5 66	7 50	11 80
Each,		23	25	34	42	50	65	1 00

**\*3300—Bottles, of best heavy German glass, free from lead, with accurately ground flat-top glass stoppers, very handsome, Tinctures.**

Approximate Capacity,		15cc.	30cc.	60cc.	125cc.	180cc.	250cc.	500cc.	1000cc.
Doz.,	\$1	30	1 55	1 90	2 20	2 85	3 30	4 30	6 15
Each,		13	15	19	22	28	33	43	62

**\*3305—Bottles, of best heavy German Glass, free from lead with accurately ground flat-top glass stoppers, very handsome, Salt-mouth.**

Approximate Capacity,		15cc.	30cc.	60cc.	125cc.	180cc.	250cc.	500cc.	1000cc.
Doz.,	\$1	60	1 80	2 25	2 65	3 15	3 90	5 50	7 40
Each,		16	18	22	26	31	39	55	70

**\*3306—Ditto, with glass stoppers, square,**  
Per doz.,

30cc.	60cc.	120cc	240cc
\$1 50.	1 65	2 25	2 75



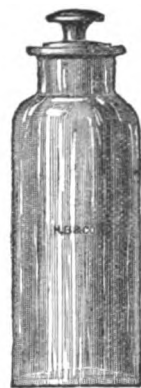
3320



3316



3305



3275-3285-3295



3306



3315



3300



3316/1

**3310—Ditto, of flint glass, with mushroom stoppers and engraved labels, for Sulphuric Acid, Nitric Acid, Hydrochloric Acid, Acetic Acid and Aq. Ammoniae. Shape like fig. 3270, (see page 150).**

Approximate Capacity,		125cc.	250cc.	500cc.	1 lit.	2 lit.
Each,	\$0	75	1 00	1 25	1 50	1 65

**3314—Bottles, with capillary neck, of soft glass, which can easily be sealed up; for preserving volatile preparations,**

Each,	\$0	20	0 27	0 35
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**\*3315—Ditto, of flint glass, for volatile liquids, with ground glass stopper and ground glass cap, best Bohemian.**

Approximate Capacity,		15cc.	30cc.	60cc.	125cc.	250cc.	500cc.	1 lit.
Each,		0 26	27	34	45	75	95	1 25
Per doz.,	\$2	85	3 00	3 75	5 00	8 00	10 50	14 00

**\*3316—Ditto, for microscopic work, with loose glass cap and glass rod; for Balsam Fir.**

Each,		0 33	40
Per Doz.,	\$3	75	4 50

**\*3316/1—Ditto, ditto, with glass balsam dropper, fitting loosely in the neck....** \$ 0 33

Cap ground on; capacity 45cc; each..... 35

**3317—Ditto, ditto, with long stopper and ground cap. See No. 3220.**

**\*3320—Ditto, of flint glass, for collodion, with camel hair brush in glass stopper**

30

**3325—Ditto, of flint glass, narrow mouth, with loose cap, 30 cc.....**

25

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

Contents,  $\frac{3}{4}$  Fluid Oze., or  $\frac{1}{2}$  Liter.

3330 to 3345



3352 &amp; 3353

REMEMBER OUR DISCOUNT.

\*3330—Bottles, for Reagents, with the names and symbols distinctly blown in the glass in raised letters, ground on the surface. They are made of glass, free from lead. Capacity, 125cc. Height, 13.3 cm.

No.		No.	
1	Hydrogen Sulphide (Amber)..... $H_2S$	20	Barium Chloride..... $BaCl_2$
2	Hydrochloric Acid..... $HCl$	21	Calcium Chloride..... $CaCl_2$
3	Acetic Acid..... $HC_2H_3O_2$	22	Calcium Sulphate..... $CaSO_4$
4	Sulphuric Acid..... $H_2SO_4$	23	Calcium Hydroxide..... $Ca(OH)_2$
5	Nitric Acid..... $HNO_3$	24	Magnesium Sulphate..... $MgSO_4$
6	Potassium Ferrocyanide..... $K_4Fe(CN)_6$	25	Mercuric Chloride..... $HgCl_2$
7	Potassium Sulphocyanide..... $KSCNS$	26	Silver Nitrate (Amber)..... $AgNO_3$
8	Potassium Carbonate..... $K_2CO_3$	27	Lead Acetate..... $Pb(C_2H_3O_2)_2$
9	Potassium Sulphate..... $K_2SO_4$	28	Ferrous Sulphate..... $FeSO_4$
10	Potassium Iodide..... $KI$	29	Ferric Chloride..... $FeCl_3$
11	Potassium Ferricyanide..... $K_3Fe(CN)_6$	30	Alcohol..... $C_2H_5OH$
12	Potassium Hydroxide..... $KOH$	31	Ammonium Sulphocyanide..... $NH_4CNS$
13	Potassium Dichromate..... $K_2Cr_2O_7$	32	Barium Hydroxide..... $Ba(OH)_2$
14	Sodium Phosphate..... $Na_2HPO_4$	33	Barium Carbonate..... $BaCO_3$
15	Ammonium Hydroxide..... $NH_4OH$	35	Ether..... $(C_2H_5)_2O$
16	Ammonium Sulphide (Amber)..... $(NH_4)_2S$	36	Cupric Sulphate..... $CuSO_4$
17	Ammonium Chloride..... $NH_4Cl$	38, 39, 40	Blank.
18	Ammonium Carbonate..... $(NH_4)_2CO_3$	59	Sodium Carbonate..... $Na_2CO_3$
19	Ammonium Oxalate..... $(NH_4)_2C_2O_4$	61	Sodium Hydroxide..... $NaOH$
37	Platinic Chloride..... $PtCl_4$	90	Magnesia Mixture.
58	Fehling's Solution.	93	Oxalic Acid..... $H_2C_2O_4$
60	Sodium Acetate..... $NaC_2H_3O_2$	94	Picric Acid..... $C_6H_2OH(NO_2)_3$
61	Sodium Hydroxide..... $NaOH$	96	Potassium Chromate..... $K_2CrO_4$
77	Ammonia..... $NH_3$	97	Ammonium Sulphate..... $NH_4HSO_4$
81	Stannous Chloride..... $SnCl_2$	100	Mercuric Potassium Iodide.
82	Ammonium Molybdate..... $(NH_4)_2MoO_4$	401	Barium Nitrate..... $Ba(NO_3)_2$
83	Carbon Disulphide..... $CS_2$	404	Silver Sulphate..... $Ag_2SO_4$
86	Mercurous Nitrate..... $Hg_2(NO_3)_2$	406	Bromine Water.
87	Indigo Solution.	407	Chloroform..... $CHCl_3$
88	Nessler's Solution.	408	Cochineal.
		409	Coralline.

**3330—Bottles, for Reagents, 125 cc. (continued).**

No.	No.
410 Litmus.	414 Iodine Solution.....I+KI
411 Methyl-Orange.	415 Methyl Alcohol.....CH <sub>3</sub> OH
412 Phenolphthalein.	416 Sodium Cobaltic Nitrite
413 Turmeric.	417 Sodium Hypsulphite Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>
<b>Single bottles, each, 27 cts.; per doz., \$2 92; per gross, \$30 84</b>	
Loose glass caps for above, per doz.....\$ 1 10	
<b>Set of 40 bottles, No. 1 to 33, 35, 36, 38, 39, 40, 59 and 61.....9 72</b>	
<b>Same set of 40 bottles, packed ready for shipment.....10 00</b>	
<b>Same set of 40 bottles, filled with chemically pure reagents, sealed and packed.....20 00</b>	

**\*3335—Bottles, for Reagents, same as No. 3330. Capacity, 250 cc.; Height, 16.5 cm. (Illustr. p. 152.)**

No.	No.
101 Sulphuric Acid, Con.....H <sub>2</sub> SO <sub>4</sub>	114 Barium Chloride.....BaCl <sub>2</sub>
102 Sulphuric Acid, Dil.....H <sub>2</sub> SO <sub>4</sub>	116 Blank.
103 Nitric Acid, Con.....HNO <sub>3</sub>	122 Ammonium Sulphide
104 Nitric Acid, Dil.....HNO <sub>3</sub>	(Amber).....(NH <sub>4</sub> ) <sub>2</sub> S
105 Hydrochloric Acid, Con.....HCl	126 Alcohol.....C <sub>2</sub> H <sub>5</sub> OH
106 Hydrochloric Acid, Dil.....HCl	129 Sodium Phosphate.....Na <sub>2</sub> HPO <sub>4</sub>
107 Hydrogen Sulphide	130 Ammonium Oxalate.....(NH <sub>4</sub> ) <sub>2</sub> C <sub>2</sub> O <sub>4</sub>
(Amber).....H <sub>2</sub> S	131 Acetic Acid.....HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>
108 Ammonium Hydroxide.....NH <sub>4</sub> OH	145 Silver Nitrate (Amber) AgNO <sub>3</sub>
109 Ammonium Chloride.....NH <sub>4</sub> Cl	150 Potassium Hydroxide.....KOH
110 Ammonium Carbonate.....(NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub>	151 Calcium Hydroxide.....Ca(OH) <sub>2</sub>
111 Sodium Hydroxide.....NaOH	152 Lead Acetate.....Pb(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub>
112 Sodium Carbonate.....Na <sub>2</sub> CO <sub>3</sub>	

**Single bottles, each, 35 cts.; per doz., \$3 75; per gross, \$38 34**  
**Set of 23 bottles, as listed.....7 19**  
**Same set of 23 bottles, packed ready for shipment.....7 50**  
**Same set of 23 bottles, filled with chemically pure reagents, sealed and packed.....21 00**

**\*3340—Bottles, for Reagents, fig. 3330. Capacity ½ lit., Height 19.7 cm. (Illustr. p. 152.)**

No.	No.
204 Ammonium Hydroxide.....NH <sub>4</sub> OH	216 Nitric Acid.....HNO <sub>3</sub>
211 Blank.	217 Hydrochloric Acid.....HCl
215 Sulphuric Acid.....H <sub>2</sub> SO <sub>4</sub>	
Each bottle, 50 cts.; per doz., \$5 42; per gross.....55 00	

**\*3341—Bottles, for Reagents, fig. 3330. Capacity, 1 lit., Height, 24 cm. (Illustr. p. 152.)**

No.	No.
501 Sulphuric Acid, Con.....H <sub>2</sub> SO <sub>4</sub>	505 Hydrochloric Acid, Con.....HCl
502 Sulphuric Acid, Dil.....H <sub>2</sub> SO <sub>4</sub>	506 Hydrochloric Acid, Dil.....HCl
503 Nitric Acid, Con.....HNO <sub>3</sub>	511 Blank.
504 Nitric Acid, Dil.....HNO <sub>3</sub>	
Each bottle, 70 cts.; per doz.....6 67	

**\*3345—Bottles, for Reagents, same as No. 3330. Capacity, 30 cc.; Height, 9.2 cm. (Illustr. p. 152.)**

No.	No.
325 Silver Nitrate (Amber) AgNO <sub>3</sub>	336 Gold Chloride.....AuCl <sub>3</sub>
326 Cobaltous Nitrate.....Co(NO <sub>2</sub> ) <sub>2</sub>	341 Blank.
327 Platinic Chloride.....PtCl <sub>4</sub>	
Each bottle, 19 cts.; per doz., \$2 09; per gross.....20 00	

**3350—Ditto, ditto, salt mouth. Capacity 30 cc.; Height 7.9 cm.**

No.	No.
350 Sodium Carbonate.....Na <sub>2</sub> CO <sub>3</sub>	367 Potassium Chlorate.....KClO <sub>3</sub>
351 Borax.....Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	368 Potassium Ferricyanide K <sub>3</sub> Fe(CN) <sub>6</sub>
353 Sodium Acetate.....NaC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>	369 Sodium Bitartrate.....NaHC <sub>4</sub> H <sub>4</sub> O <sub>6</sub>
354 Potassium Nitrate.....KNO <sub>3</sub>	370 Sodium Nitrate.....NaNO <sub>3</sub>
358 Potassium Cyanide.....KCN	371 Starch.
361 Am. Sod. Phosphate.....NaNH <sub>4</sub> HPO <sub>4</sub>	372 Test Paper.
364 Copper.....Cu	373 Zinc.
365 Ferrous Sulphate.....FeSO <sub>4</sub>	374 Ammonium Phosphate (NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub>
366 Ferrous Sulphide.....FeS	375 Blank.

**Each bottle, 21 cts.; per doz., \$2 25; per gross.....21 66**

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

3351—Bottles, for Reagents, salt mouth. Capacity, 125 cc.; Height 12.4 cm.

No.		No.	
301	Sodium Carbonate..... $\text{Na}_2\text{CO}_3$	305	Ferrous Sulphate..... $\text{FeSO}_4$
302	Potassium Nitrate..... $\text{KNO}_3$	307	Blank.
303	Potassium Cyanide..... $\text{KCN}$	312	Test Paper.
304	Borax..... $\text{Na}_2\text{B}_4\text{O}_7$	313	Sodium Ammonium Hydrogen Phosphate..... $\text{Na}(\text{NH}_4)\text{HPO}_4 \cdot 4\text{H}_2\text{O}$

Each, 30 cts.; per doz., \$3 22; per gross..... \$34 17

\*3352—**BOTTLES, FOR REAGENTS, NEW IMPROVED, HENRY HEIL CHEMICAL CO.'S, WITH HOOD-STOPPERS, with Acid-Proof Labels and Symbols Blown in the Stoppers.** (Illustr. p. 152.)

It affords us great pleasure to announce to our patrons and friends, that we have succeeded in combining the most desirable features of the various reagent-bottles in use and that we have thus produced an **ideal chemical reagent-bottle** meeting all requirements of the most exacting and scrutinizing chemist.

The main features of these reagent-bottles are the hood-stopper, the shape of the lip and the raised acid-proof label.

The object of the hood-stopper is to prevent an accumulation upon the lip of the bottle of dust and the salts deposited from the atmosphere of chemical laboratories.

Attention is called to the following important points in the construction of these reagent-bottles:

1. The top of the stopper (*d*) is flat, and is thus conveniently held between the fingers of the inverted or upturned hand, while the same hand is employed, without inconvenience, in holding the bottle from which the liquid is poured.

2. The whole stopper is of one solid piece of glass, and the **symbols are blown in the stopper**, by which the misplacing of stoppers is prevented.

3. The hood (*b*) does not rest upon the mouth of the bottle, but is at a distance from it of about  $1\frac{1}{2}$  millimeters. This prevents the small amount of liquid that may remain on the mouth after use from coming in contact with the hood of the stopper.

4. The flange (*e*) dependent from the hood (*b*) reaches below the edge of the mouth of the bottle, protecting it completely from floating dust and laboratory fumes. It does not, however, touch the edge of the mouth, and thus avoids extra friction and the danger of breaking the flange when the stopper is removed.

5. The hood and dependent flange make it impossible, when the stopper is held inverted, for drops of acid or other corrosive liquid, which may adhere to the point of the stopper, to run back upon the hand.

6. Whenever, by accident or otherwise, the stopper is laid upon the desk, the point (*a*) which enters the bottle, being lighter than the head, can never touch the desk, and therefore never comes in contact with anything but the inside of the bottle. (See illustration of the stopper.)

7. Chemists using bottles with this stopper will never find it necessary to wipe off the mouth of the bottle before pouring from it chemically pure reagents.

8. The lip of the bottle is thin, so that small quantities of liquid can be poured out quickly or slowly.

9. The names and symbols are distinctly blown in the glass in **raised letters, ground on the surface**, and these labels are therefore acid-proof and indestructible.

10. The bottles are made of stout glass free from lead.

It will be found that **our Improved Chemical Reagent-Bottles** supply a long felt want.

**The 125 cc. (4 oz.) Improved Chemical Reagent-Bottles are furnished with the following Acid-Proof Labels, or without Labels, if desired:**

No.		No.	
10	$\text{H}_2\text{S}$ ..... Hydrogen Sulphide (Amber)	80	$\text{K}_2\text{CO}_3$ ..... Potassium Carbonate.
20	$\text{HCl}$ ..... Hydrochloric Acid.	90	$\text{K}_2\text{SO}_4$ ..... Potassium Sulphate.
30	$\text{HC}_2\text{H}_3\text{O}_2$ ..... Acetic Acid.	100	$\text{KI}$ ..... Potassium Iodide.
40	$\text{H}_2\text{SO}_4$ ..... Sulphuric Acid.	110	$\text{K}_3\text{Fe}(\text{CN})_6$ ..... Potassium Ferricyanide
50	$\text{HNO}_3$ ..... Nitric Acid.	120	$\text{KOH}$ ..... Potassium Hydrate.
60	$\text{K}_4\text{Fe}(\text{CN})_6$ ..... Potassium Ferrocyanide.	130	$\text{K}_2\text{Cr}_2\text{O}_7$ ..... Potassium Dichromate.
70	$\text{KCNS}$ ..... Potassium Sulphocyanide.	140	$\text{Na}_2\text{HPO}_4$ ..... Sodium Phosphate.

**3352—Bottles, for Reagents, New Improved, H. H. C. Co.'s with Hood Stoppers, continued.**

No.		No.	
150	NH <sub>4</sub> OH..... Ammonium Hydroxide.	270	Pb(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub> Lead Acetate.
160	(NH <sub>4</sub> ) <sub>2</sub> S..... Ammonium Sulphide (Amber)	280	FeSO <sub>4</sub> ..... Ferrous Sulphate.
170	NH <sub>4</sub> Cl..... Ammonium Chloride.	290	FeCl <sub>3</sub> ..... Ferric Chloride.
180	(NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> ..... Ammonium Carbonate.	300	C <sub>2</sub> H <sub>5</sub> OH..... Alcohol.
190	(NH <sub>4</sub> ) <sub>2</sub> C <sub>2</sub> O <sub>4</sub> ..... Ammonium Oxalate.	310	NH <sub>4</sub> CNS..... Ammonium Sulphocyanide.
200	BaCl <sub>2</sub> ..... Barium Chloride.	320	Ba(OH) <sub>2</sub> ..... Barium Hydroxide.
210	CaCl <sub>2</sub> ..... Calcium Chloride.	330	BaCO <sub>3</sub> ..... Barium Carbonate.
220	CaSO <sub>4</sub> ..... Calcium Sulphate.	350	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> O..... Ether.
230	Ca(OH) <sub>2</sub> ..... Calcium Hydrate.	360	CuSO <sub>4</sub> ..... Cupric Sulphate.
240	MgSO <sub>4</sub> ..... Magnesium Sulphate.	380, 390, 400	Blank.
250	HgCl <sub>2</sub> ..... Mercuric Chloride.	590	Na <sub>2</sub> CO <sub>3</sub> ..... Sodium Carbonate.
260	AgNO <sub>3</sub> ..... Silver Nitrate (Amber)	610	NaOH..... Sodium Hydroxide.

**We can also furnish the 125 cc. Improved Chemical Reagent-Bottles with the following Acid-Proof Labels, but not in a smaller quantity than four dozen of a kind:**

370	PtCl <sub>4</sub> ..... Platinic Chloride.	1000	Mercuric Potassium Iodide.
580	No Symbols..... Fehling's Solution.	4010	Ba(NO <sub>3</sub> ) <sub>2</sub> ..... Barium Nitrate.
600	NaC <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ..... Sodium Acetate.	4040	Ag <sub>2</sub> SO <sub>4</sub> ..... Silver Sulphate.
770	NH <sub>3</sub> ..... Ammonia.	4060	No Symbols..... Bromine Water.
810	SnCl <sub>4</sub> ..... Stannous Chloride.	4070	CHCl <sub>3</sub> ..... Chloroform.
820	(NH <sub>4</sub> ) <sub>2</sub> MoO <sub>4</sub> ..... Ammonium Molybdate.	4080	Cochineal.
830	CS <sub>2</sub> ..... Carbon Disulphide.	4090	Coralline.
860	Hg <sub>2</sub> (NO <sub>3</sub> ) <sub>2</sub> ..... Mercurous Nitrate.	4100	Litmus.
870	No Symbols..... Indigo Solution.	4110	Methyl-Orange.
890	No Symbols..... Nessler's Solution.	4120	Phenolphthalein.
900	No Symbols..... Magnesia Mixture.	4130	Turmeric.
930	H <sub>2</sub> C <sub>2</sub> O <sub>4</sub> ..... Oxalic Acid.	4140	I+KI..... Iodine Solution.
940	C <sub>6</sub> H <sub>5</sub> OH(NO <sub>2</sub> ) <sub>3</sub> ..... Picric Acid.	4150	CH <sub>3</sub> OH..... Methyl Alcohol.
960	K <sub>2</sub> CrO <sub>4</sub> ..... Potassium Chromate.	4160	Sodium Cobaltic Nitrite.
970	NH <sub>4</sub> HS..... Ammonium Sulphydrate.	4170	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ..... Sodium Hyposulphite.

**Price of 125 cc. Improved Chemical Reagent-Bottles:**

Each, 45 cents; per doz., \$5 25; in lots of ½ gross, \$58 00 per gross; in lots of one gross or more, \$55 00 per gross.

**Any label desired will be engraved on the foregoing bottles, including stoppers, at an additional cost of 40 cts each, or \$3.30 per dozen.**

**\*3353—Ditto, ditto, ditto, 8 oz. size. (Illustr. p. 152.)**

**The 250 cc. Improved Chemical Reagent-Bottles are furnished with the following Acid-Proof Labels, or without Labels, if desired:**

1010	H <sub>2</sub> SO <sub>4</sub> ..... Sulphuric Acid, Con.	1140	BaCl <sub>2</sub> ..... Barium Chloride.
1020	H <sub>2</sub> SO <sub>4</sub> ..... Sulphuric Acid, Dil.	1160	Blank.
1030	HNO <sub>3</sub> ..... Nitric Acid, Con.	1220	(NH <sub>4</sub> ) <sub>2</sub> S..... Ammonium Sulphide (Amber).
1040	HNO <sub>3</sub> ..... Nitric Acid, Dil.	1260	C <sub>2</sub> H <sub>5</sub> OH..... Alcohol.
1050	HCl..... Hydrochloric Acid, Con.	1290	Na <sub>2</sub> HPO <sub>4</sub> ..... Sodium Phosphate.
1060	HCl..... Hydrochloric Acid, Dil.	1300	(NH <sub>4</sub> ) <sub>2</sub> C <sub>2</sub> O <sub>4</sub> ..... Ammonium Oxalate.
1070	H <sub>2</sub> S..... Hydrogen Sulphide (Amber)	1310	HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ..... Acetic Acid.
1080	NH <sub>4</sub> OH..... Ammonium Hydroxide.	1450	AgNO <sub>3</sub> ..... Silver Nitrate (Amber)
1090	NH <sub>4</sub> Cl..... Ammonium Chloride.	1500	KOH..... Potassium Hydroxide.
1100	(NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> ..... Ammonium Carbonate.	1510	Ca(OH) <sub>2</sub> ..... Calcium Hydroxide.
1110	NaOH..... Sodium Hydroxide.	1520	Pb(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub> ..... Lead Acetate.
1120	Na <sub>2</sub> CO <sub>3</sub> ..... Sodium Carbonate.		

**Price of 250 cc. Improved Chemical Reagent-Bottles:**

Each, 55 cents; per doz., \$6 25; in lots of ½ gross, \$71 00 per gross; in lots of 1 gross or more, \$67 00 per gross.

**Any label desired will be engraved on the foregoing bottles, including stoppers, at an additional cost of 40 cts. each, or \$3.30 per dozen.**

**3355—Bottles, for reagents, best German, with flat glass stoppers, and enameled (vitrified) labels. Shape of bottles like fig. 3300.**

	125 cc.	250 cc.	½ lit.	1 lit.
Doz.,	\$11 40	13 50	18 25	24 60
Each,	1 00	1 30	1 60	2 15

3355/1—Ditto ditto, with high stoppers; same prices as No. 3355.

3355/2—Ditto, ditto, with high cut stoppers; 15 per cent higher than No. 3355.

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

3356—**Bottles, for Reagents;** No. 3355, 3355/1 and 3355/2, **if ordered to be imported duty free**, will be provided with labels of any shape desired.

3357—Ditto, ditto; **if salt mouth**, 15 per cent higher than No. 3355, 3355/1 and 3355/2.

\*3360—Ditto, for generating gas, of best German glass, sides and bottoms of uniform thickness, light glass.

	125 cc.	250 cc.	350 cc.	500 cc.	1000 cc.
Each, \$	18	25	28	31	44

\*3370—Ditto, **of fine Bohemian glass**, with tubulature near the bottom (Aspirator Bottles).

	125 cc.	250 cc.	500 cc.	1 lit.	2 lit.	3 lit.	4 lit.	8 lit.	20 lit.	30 lit.
Each, \$	37	44	56	81	1 15	1 50	2 00	3 50	8 75	13 25

\*3371—Ditto, ditto, with ground glass stoppers.

	1 lit.	2 lit.	4 lit.
Each, \$	1 00	1 40	2 35

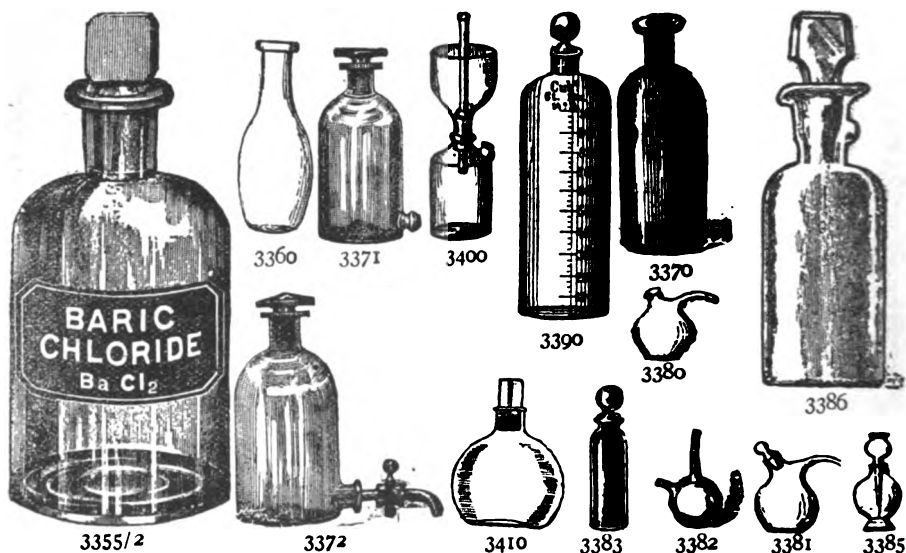
3371/1—Ditto, ditto, **with narrow tubulature**, to connect direct with rubber tubing, otherwise same as No. 3370, without stopper.

	500 cc	1 lit.	2 lit.
Each, \$	56	81	1 15

\*3372—Ditto, ditto, **with glass stopper and glass stop-cock ground into the tubulature.**

	1 lit.	2 lit.	4 lit.	8 lit.	20 lit.	30 lit.
Each, \$	2 50	3 10	4 40	6 65	13 35	18 00

REMEMBER OUR DISCOUNT.



\*3380—**Bottle, Dropping; plain;** each ..... \$ 0 25

\*3381—Ditto, ditto, with ground stopper; each ..... 30

\*3382—Ditto ditto, Salleron's Dropping Flask ..... 30

\*3383—Ditto, ditto, with pipette ground into the neck, the bulb of the pipette having an opening on top. 15 cc. 30 cc.

\$0 37 44

\*3385—Ditto, ditto, with pipette and thistle top, covered with caoutchouc; each 30

\*3386—Ditto, ditto. The stopper allows air to enter and liquid to pass out, and when turned it closes the bottle. **The best dropping bottle made.** 30 cc. 60 cc. capacity.

	30 cc.	60 cc.
Each, \$	25	30
Per doz.,	2 40	2 90

\*3390—Ditto, glass stoppered, graduated (**Mixing Bottles**).

	250 cc.	500 cc.	1000 cc.
Each, \$	1 55	2 50	3 75

\*3400—**Bottles, Separatory.** 1/4 lit. 1 lit.

	1/4 lit.	1 lit.
Each, \$	1 75	2 20

\*3410—**Bottles, Specific Gravity**, of very light glass, with perforated stopper, unadjusted. Capacity about 10 cc. 25 cc. 50 cc.

	10 cc.	25 cc.	50 cc.
\$	30	35	50

\*3415—Bottles, Specific Gravity, of light glass, with mark around neck.

	100 grains.	1000 grains.
Each, \$	50	75

\*3420—Ditto, Specific Gravity, of light glass, with solid stopper accurately adjusted; capacity

	10	25	50	100 grms.
Each, \$	90	1 10	1 50	1 75

3421—Ditto, ditto, ditto, fig. 3420.

Capacity,	100	500	1000 grains.
Each,	\$1 00	1 50	1 75

\*3425—Ditto, Specific Gravity, of very light glass, with perforated stopper, adjusted with the utmost accuracy.

Capacity,	10	25	50	100 grms.
Each,	\$0 75	1 00	1 35	1 50

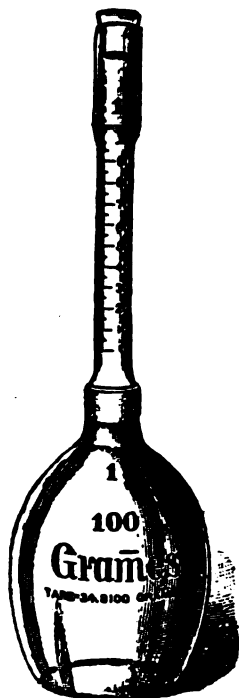
3426—Ditto, ditto, ditto, fig. 3425.

Capacity,	100	500	1000 grains.
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Each,	\$0 75	1 25	1 50
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3430—Ditto, Specific Gravity, of light glass, with solid stopper, adjusted with the utmost accuracy, **in chamois-lined case, with counterpoise.**

	25	50	100 grms.
Each, \$	2 50	3 25	3 75



3442



3441/1



3435



3441/2



3415



3440



3425



3420

3431—Ditto, ditto, of light glass, with perforated stopper, very accurately adjusted, **in chamois-lined case, with counterpoise; 1000 grains, each**

\$ 3 25

\*3435—Ditto, Specific Gravity, Geissler's, with a fine thermometer ground in, and capillary tube with glass cap, most accurately adjusted.

	25	50	100 grammes.
Each, \$	3 85	4 00	4 30

\*3440—Bottles, Specific Gravity, of light glass, with a fine thermometer ground into the neck, very accurately adjusted, 100 grammes, each.....

3 00

\*3441/1—Ditto, Specific Gravity, according to **Regnault, for taking the specific gravity of solids; with graduation mark.**

	25	50	100 grammes.
Each, \$	0 75	1 10	1 25

\*I 3441/2—Ditto, Specific Gravity, according to **Regnault, for taking the specific gravity of liquids; with graduation mark and stopper not shown in cut.**

	25	50	100 grammes.
Each, \$	0 65	0 75	0 95

\*3442—Ditto, Specific Gravity, according to Dr. E. R. Squibb, for specific gravity at different standard volumes.

Capacity,	25	50	100 cc.
Each,	\$4 00	4 30	5 00

**APPROXIMATE EQUIVALENTS.**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.;  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

I 3443—**Bottles**, Specific Gravity; same as No. 3442, but with perforated glass stopper and wider top, allowing expansion and at the same time preventing loss by evaporation.

Capacity,	25	50	100 cc.
Each,	\$4 80	5 15	6 00

\*3445—Ditto, Specific Gravity, according to Bunsen, for determining the specific gravity of gases

\$ 1 65

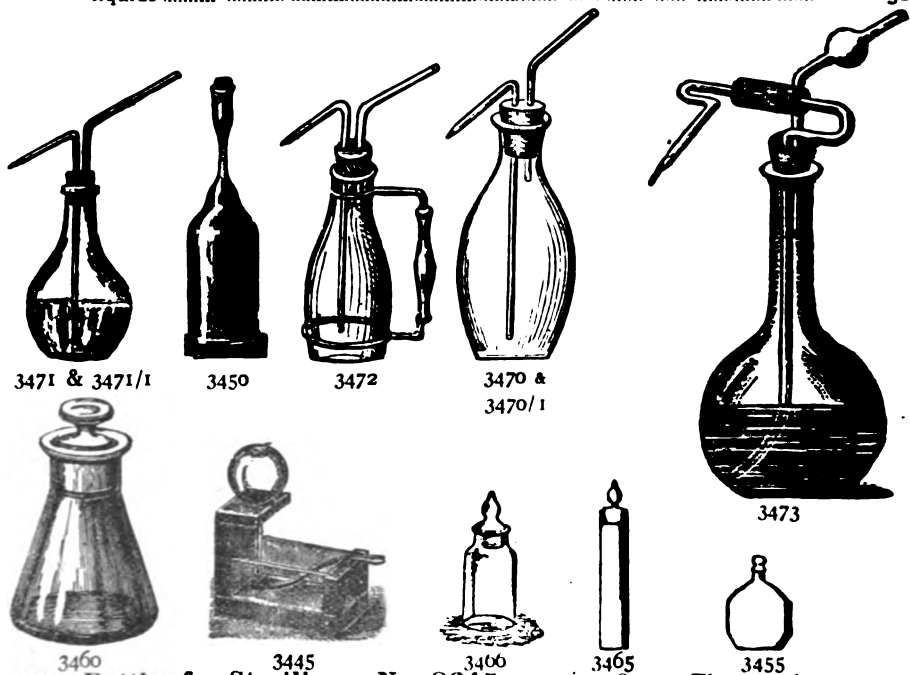
Pneumatic Trough for same

9 35

\*3450—Ditto, Specific Gravity, according to Fresenius, for determining the specific gravity of gases.

small	large.
\$0 90	\$1 25

\*3455—**Bottles**, for spectral analysis, with parallel cut surfaces and glass stopper; small (about 2 cc.), for estimating the absorption lines of liquids



3457—**Bottles for Sterilizers No. 8645**, capacity 180cc. They can be used as nursing bottles, by slipping a nipple over the neck.

Per doz., \$1 12½.

Per gross, 11 25

\*3460—Ditto, for weighing, of light glass, glass stoppered, cone shape.

30 cc.	60 cc.	125 cc.
\$0 45	60	70

\*3465—Ditto, ditto, tube shape.

50x15	60x15	75x20	100x25	125x28mm.
\$0 22½	25	27	31	37

\*3466—Ditto, ditto, low shape.

Height,	50	50	50mm.
Diameter,	25	30	35mm.
	\$0 37	0 44	50

\*3470—Ditto, **Washing**, Faraday's, fitted with rubber stoppers and tubes, bottle shape.

125cc.	250cc.	350cc.	500cc.	1 lit.
\$0 48	54	60	70	1 00

\*3470/1—Bottles, Washing, Faraday's, with cork stoppers, bottle shape.

125cc.	250cc.	350cc.	500cc.	1 lit.
\$0 38	43	48	55	80

\*3471—Ditto, ditto, flask shape, with rubber stoppers.

125cc.	250cc.	350cc.	500cc.	1 liter.	2 liter.
\$0 44	50	56	62	94	1 25

\*3471/1—Ditto, ditto, flask shape, with cork stoppers.

125cc.	250cc.	350cc.	500cc.	1 liter.	2 liter.
\$0 35	40	45	50	75	1 00

\*3472—Ditto, ditto, bottle shape, with handle.

350cc.	500cc.
\$1 25	1 50

\*3473—Ditto, ditto, with movable exit tube.

Capacity	250cc.	500cc.	1000cc.
Each,	\$0 95	1 25	1 85

REMEMBER OUR DISCOUNT.



\*3474—**Bottles, Washing, for ether, etc.** All glass, tubes ground into the neck of the bottle. Capacity, 150 250 500 1000 cc.  
Each, \$1 00 1 25 1 55 1 85

\*3474/1—Ditto, ditto, according to Langbein, with two glass stop-cocks, tubes ground into the neck of the bottle.

Capacity, 125 250 500 1000cc  
Each, \$3 10 3 75 5 00 6 50

\*3475—**Bottles, Washing, Drechsel's**, all glass, tubes ground into the neck of the bottle, for ether, etc.

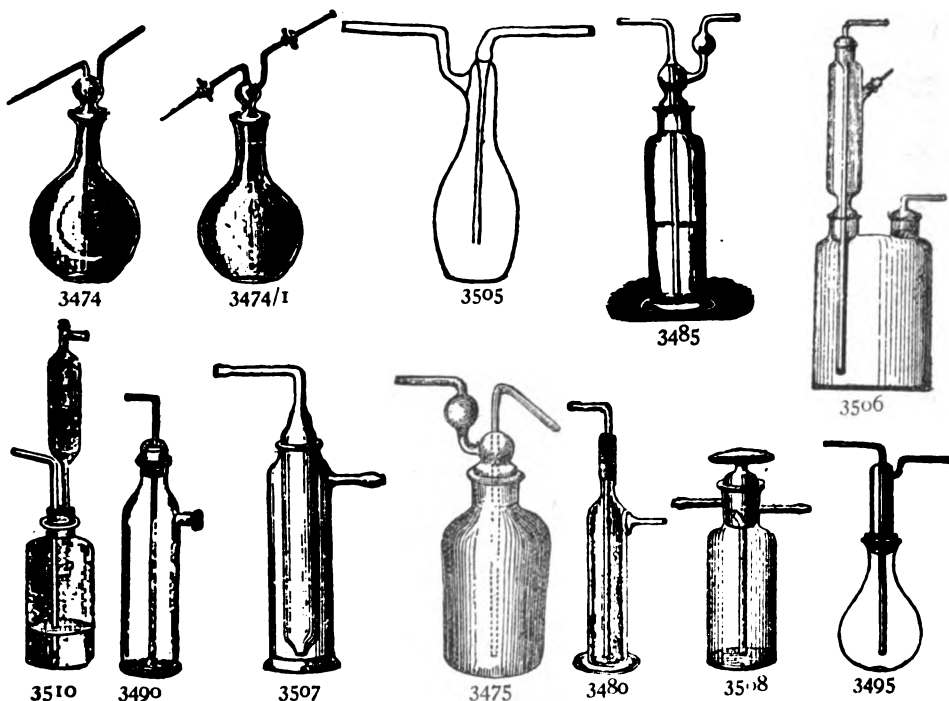
250cc 500cc 1 liter.  
\$1 25 1 55 1 85

\*3480—**Bottles**, for washing gases, according to Bunsen.

18x4 24x5 30x6 cm.  
\$0 62 95 1 15

\*3485—Ditto, ditto, Drechsel's.

250cc 500cc 1 liter.  
\$1 25 1 65 2 00



\*3490—Ditto, ditto, according to Silliman, with wide neck for rubber stopper.

18x4 23x6 cm.  
\$0 80 1 25

\*3495—Ditto, ditto, Vogel's. 250cc 500cc 1 liter. 2 liter.  
\$0 85 1 00 1 25 1 50

3500 Ditto, ditto, for Oxygen, with brass fittings, capacity, 1 liter; see fig. 2260

\$ 4 50

\*3505—Ditto, ditto, according to Cloez. 250cc. 500cc.  
\$1 25 1 55

\*3506—Ditto, **Gas Washing**, Clemens Winkler's..... 5 25

\*3507—Ditto, **Gas Washing**, Habermann's; capacity, 250 cc..... 1 90

\*3508—Ditto, **Gas Washing**, Raikow's.

250 cc 500 cc 1 liter 2 liters.  
\$2 35 2 80 3 75 4 70

\*3510—Ditto, ditto, used in the determination of Ammonia in illuminating gas, complete with bottle and rubber stopper, 250 cc.....

1 50

\*3511—Bottles, for drying, absorbing and washing gases, improved form.

250cc.	500cc.	1000cc.
\$2 50	3 10	3 75

\*3512—Ditto, Gas Washing and Absorbing, according to Tieftrunk; capacity, 250 cc.

\$ 2 75

\*3513—Bottles, Gas Washing, according to Allihn.

Capacity,	250cc.	500cc.	1000cc.	2000cc.
	\$1 90	2 50	2 75	3 75

\*3514—Ditto, Gas Washing, according to Muencke.

250cc.	500cc.
\$2 50	3 10

\*3515—Ditto, Wulf's, of best Bohemian glass, with two necks.

60cc.	125cc.	250cc.	500cc.	1 lit.	1.5 lit.	2 lit.	4 lit.	8 lit.
\$0 45	50	55	60	1 05	1 30	1 55	2 70	3 75

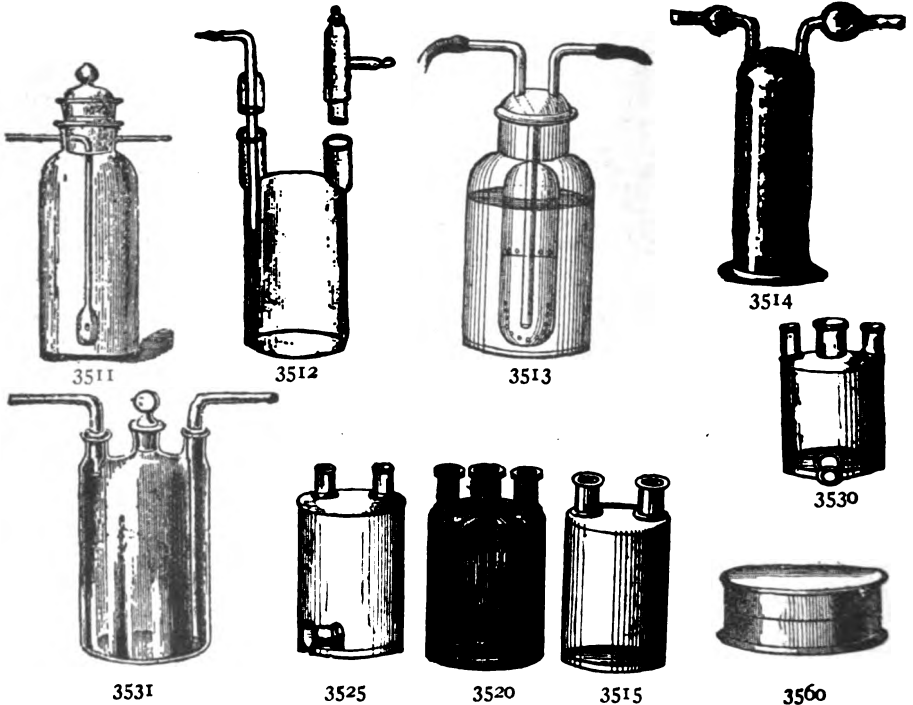
\*3520—Ditto, ditto, with three necks.

60cc.	125cc.	250cc.	500cc.	1 lit.	1.5 lit.	2 lit.	4 lit.	8 lit.
\$0 50	55	60	70	1 15	1 40	1 70	3 10	4 10

\*3525—Ditto, ditto, with two necks and tubulature near the bottom.

500cc.	1 liter.	2 liters.	4 liters.	8 liters.
\$1 00	1 50	2 00	3 25	5 00

REMEMBER OUR DISCOUNT.



\*3530—Ditto, ditto, with three necks and tubulature near bottom

500cc.	1 liter.	2 liters.	4 liters.	8 liters.
\$1 10	1 65	2 20	3 55	5 50

\*3531—Ditto, ditto, with three necks, with glass stopper in the middle neck, and delivery tubes ground in the side necks.

Each,	125cc.	250cc.	500cc.	1 liter.	2 liters.
\$1 25	1 55	2 00	2 50	3 60	

3540—Ditto, of gutta-percha; fig. 3235.

Approximate Capacity

Each,	30cc.	60cc.	125cc.	250cc.	500cc.
\$0 60	75	85	1 30	1 70	

3541—Ditto, of lead, for hydrofluoric acid.

Approximate Capacity	125cc.	250cc.	500cc.	1 lit.	2 lit.	4 lit.	8 lit.	12 lit.	20 lit.
	\$1 15	1 50	2 25	3 00	3 75	4 90	7 90	9 00	11 65

\*3560—Boxes, paste-board, round, glazed paper.

Per doz	32x11mm.	38x14mm.	44x17mm.
Per gross,	\$0 20	21	22
	1 95	2 05	2 20

**\*3565—Boxes, turned, white wood.**

	7.5cc.	15cc.	30cc.	60cc.	125cc.	250cc.
Per doz	\$0 10	15	20	25	35	75
Per gross	0 75	95	1 25	1 95	3 00	

3566—Ditto, ditto, high shape, 30cc.; per doz. 30cts.; per gross \$ 2 50

3569—Ditto, wooden, dove-tail, with sliding lid.

Length	178	98	82 mm. inside.
Width	57	98	82 mm. inside.
Height	57	127	120 mm. inside.
Each	\$0 11	10	09
Per doz	1 10	1 00	90

**\*3570—Boxes, paste-board, square sliding, white glazed paper.**

	52x33x13 mm.	65x40x16 mm.	78x46x19 mm.
Per doz	\$0 20	25	30
Per gross	1 70	2 00	2 35

3571—Ditto, ditto, fig. 3570

	57x32x16 mm.	63x38x19 mm.	70x44x22 mm.
Per doz	\$0 30	40	45
Per gross	2 50	3 00	3 50

3572—Ditto, ditto, of fine gold star paper, assorted colors, fig. 3570.

	57x32x16 mm.	63x38x19 mm.	70x44x22 mm.
Per doz	\$0 40	45	50
Per gross	3 50	4 00	4 50

**\*3573—Ditto, of seamless tin, very neat and strong.**

	7.5 cc.	15 cc.	30 cc.	60 cc.	125 cc.	250cc.
Per gross	\$0 85	1 20	1 70	2 75	4 25	6 80
Per 1/2 gross	50	70	1 00	1 60	2 45	3 90
Per 1/4 gross					1 35	2 15
Per dozen	15	18	25	40	60	1 00

**\*3575—Ditto, for holding twine, of glass, each**

0 62

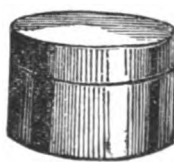
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

3596 &  
3596/1

3580



3595



3565



3590



3575



3573



3570

**\*3580—Brushes, Acid, of fine spun glass.**

small large  
 Each, \$0 30 35

**\*3590—Ditto, Assay Button, nickel-plated handle, genuine white bristles**

92

**\*3595—Brushes, for cleaning Bucking Boards No. 7730, extra stout and durable.**

	7.5 cm.	9 cm.	10 cm.	11.5 cm.
	\$0 75	85	95	1 10

**\*3596—Ditto, Marking, bristle, long cedar handle,**

	No. 5	6
Each	\$0 15	0 15
Doz	1 15	1 35

**\*3596/1—Ditto, Marking, camel's hair, long cedar handle, assorted; each**

Per doz		
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18  
1 50

- \*3597—Brushes, bristle, with wooden handle (sash tools), No. 6; a nice size for laboratory use; each, \$0 25; per doz. \$ 2 00**
- \*3600—Brushes, camel hair, quill handle.**
- |       |        |      |                              |  |
|-------|--------|------|------------------------------|--|
|       | med.   | lge. | <b>extra lge. and heavy.</b> |  |
| Each  | \$0 05 | 0 10 | \$0 15                       |  |
| Doz   | 30     | 60   | 0 95                         |  |
| Gross | 3 00   | 7 00 | 10 50                        |  |
- \*3605—Ditto, ditto, wooden handle, extra large, for cleaning balances, etc. 0 50**
- \*3610—Ditto, ditto, flat, wooden handle, for cleaning scale pans.**
- |      |         |       |         |             |
|------|---------|-------|---------|-------------|
|      | 2.5 cm. | 5 cm. | 7.5 cm. | 9 cm. wide. |
| Each | \$0 30  | 50    | 85      | 1 40        |
- \*3615—Ditto, for cleaning test-tubes, with strong galvanized iron wire handle; standard and best test-tube brush. By full doz., 40 cts.; each 06**
- \*3615/1 Ditto, ditto, smaller and lighter than No. 3615; for small test-tubes. Per dozen 30 cts; each 04**
- \*3616—Ditto, ditto, brass wire handle. Doz., \$1 05; each 11**
- \*3616/1—Ditto, ditto, brass wire handle, with sponge end; by full doz., \$1 25; each 13**
- \*3620—Ditto, ditto, for cleaning test-tubes, galvanized iron wire handle, with sponge end, standard and best test-tube brush. By full doz., \$1 12; each 12**
- \*3625—Ditto, for cleaning bottles, cylinders, etc.**
- |      |        |       |       |       |
|------|--------|-------|-------|-------|
|      | 25cm.  | 30cm. | 38cm. | 50cm. |
| Each | \$0 20 | 25    | 30    | 35    |
- \*3630—Ditto, for cleaning narrow tubes; per doz., 19 cts.; each 05**
- \*3631—Ditto, ditto, 90cm. long; each 20**
- \*3632—Ditto, for cleaning beakers, with wooden handle; each 30**

REMEMBER OUR DISCOUNT.



3597



3600



3610



3615-3615/1-3616



3616/1



3620



3625



3635 &amp; 3636



3630



3641



3640

- \*3635—Buckets, enameled like granite, seamless, with tin covers.**

	475cc.	950cc.	1.4 lit.	1.9 lit.	2.8 lit.	3.8 lit.	5.5 lit.	7.6 lit.	9.5 lit.
Each	\$0 63	81	90	1 00	1 19	1 56	1 79	2 17	2 71
Per doz.	6 75	8 78	9 67	10 80	12 60	15 75	19 35	23 60	29 25

15 liters.

Each, \$3 75

Per doz. 40 95

19 liters.

Each, 4 38

Per doz. 47 25

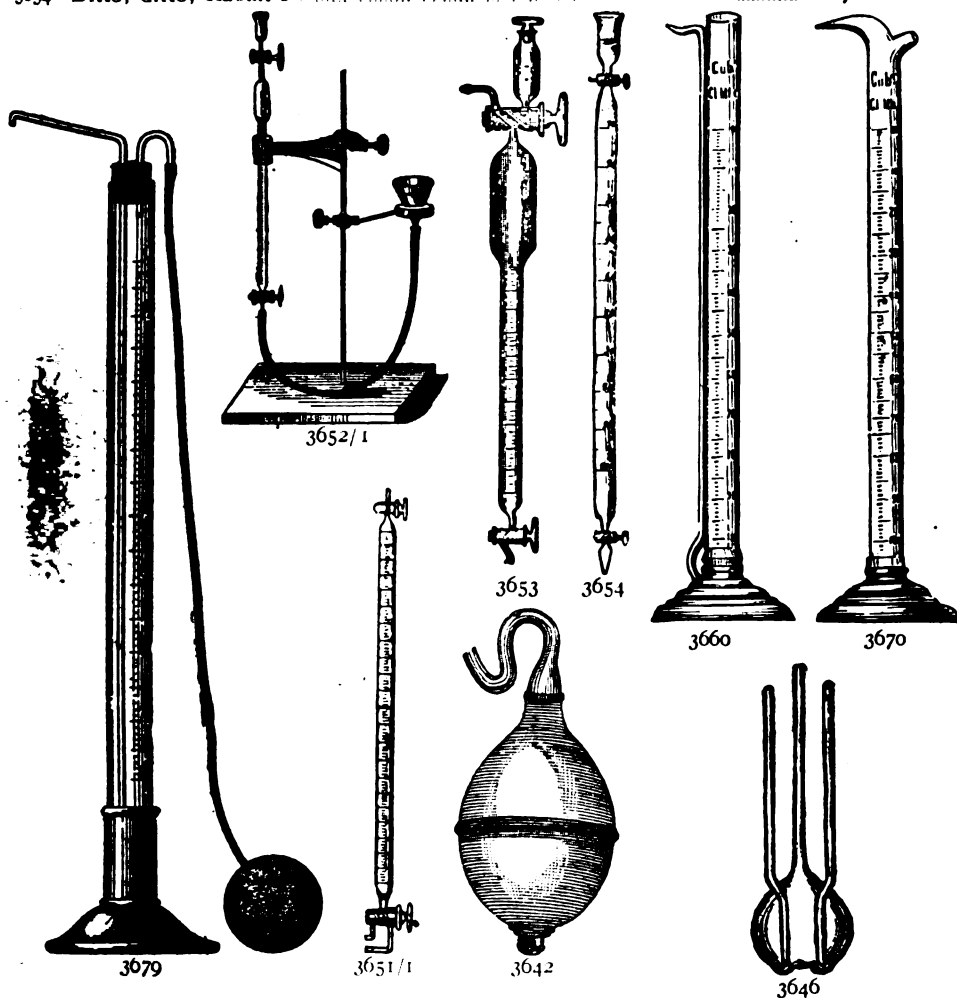
- \*3636—Buckets, enameled like granite, seamed, with tin covers.**

	475cc.	950cc.	1.4 lit.	1.9 lit.	3.8 lit.	7.6 lit.	11.4 lit.
Each,	40	48	55	60	95	1 50	2 10
Doz., \$	4 40	5 20	6 00	6 60	10 40	15 70	24 40

- \*3640—Bulbs, India Rubber, small, for pipettes 06**

- \*3641—Ditto, ditto, large 11**

- \*3642—**Bulbs**, India rubber, large, with valve at each end and rubber tube connection ..... \$ 0 50
- \*3645—**Bulb, glass**, for water or mercury reservoirs. See catalogue of Physical Apparatus.
- \*3646—**Bulb Apparatus**, with long neck and with two tubes sealed in; capacity 150cc ..... 1 25
- \*3650—**Burette, Gas, Dr. Cl. Winkler's**; see No. 1900 ..... —
- \*3651—**Ditto**, ditto, with support, fig. 1901; see No. 1901 ..... —
- \*3651/1—**Burette, Gas**, Winkler's improved, without support ..... 10 7
- \*3652—**Burette, Gas**, Buntjes; the burette alone ..... 7 55
- \*3652/1—**Ditto**, ditto, with support, funnel and rubber tubing ..... 9 30
- \*3653—**Ditto**, ditto, Buntjes, with improved stop-cocks, without support ..... 12 55
- \*3654—**Ditto**, ditto, Raoult's ..... 7 00



**BURETTES, GRADUATED, ABSOLUTELY ACCURATE, FOR SCIENTIFIC WORK.**

\*3660—**Burettes, Gay Lussac's**, on polished wooden foot.

	10	25	50	50	100cc.
Divided into.....	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>
	\$1 20	1 35	1 80	1 95	2 75

\*3670—**Ditto, Bink's English form**, on polished wooden foot.

	10	25	50	50	100	100	200cc.
Divided into.....	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>	1 <sup>0</sup> / <sub>10</sub>
	\$1 00	1 35	1 60	1 85	1 85	2 75	3 10

\*3679—**Ditto, Mohr's Pouring Burette**, without rubber tube and bulb. 50cc. in  $\frac{1}{4}$ ; each ..... 2 50

**\*3680—Burettes, Mohr's, with tip, FOR spring clamp and rubber connection.** (Illustr. p. 165.)

	10	20	25	25	50	50	50cc.
Divided into.....	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{10}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{10}$
	\$0 80	0 90	0 95	1 00	1 25	1 50	1 60
Div. into	$\frac{75}{8}$	$\frac{100}{4}$	$\frac{100}{4}$	$\frac{100}{4}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{10}$
	\$2 00	1 90	2 25	2 50			

We always furnish these Burettes with spring clamps, rubber connection and jet at an extra cost of 25 cts. each, unless advised to the contrary.

**Burette Attachment, according to Henry Heil, for bringing the liquid, after filling a burette, automatically to the zero point.** For full description of same see No. 3680/2. We only furnish above burettes with this attachment, if especially ordered, and then at an additional cost for each burette of .....

\$ 0 40

**\*3680/1—Burettes, Mohr's, with tip, FOR spring clamp and rubber connection; with side tube for filling from reservoir.** Illustr. p. 165 shows small tube above, which is not furnished.

	25	50	100 cc.
Divided into.....	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$
	\$1 50	1 85	2 85

**\*3680/2—Burette Attachment, designed by Henry Heil, for bringing the liquid, after filling a burette, automatically to the zero point, consisting of a Rubber Stopper with two holes, a straight glass-tube and a bent glass-tube, the latter acting as a syphon. This arrangement obviates the use of the many complicated pieces of apparatus offered for the same purpose. All that is necessary is to insert the Rubber Stopper carrying the two glass-tubes in the burette and push the bent tube down slightly above the zero point, the correct position depending upon the diameter of the burette.** (Illustr. p. 165.)

1. In use with burettes No. 3680/1, 3680/3, 3688, and 3689, having an arrangement for filling them from a reservoir, the liquid is allowed to rise until it commences to flow from the bent tube, when the supply from the reservoir should be stopped. Thereupon the bent tube acting as a syphon the liquid will be brought to the zero point. To the end of the bent tube a piece of Rubber Tubing of suitable length should be attached to carry the overflowing liquid to any desired receptacle. It will be observed that the straight tube projects higher from the Rubber Stopper than the bent tube and in use must always be kept in this position.

2. In use with burettes No. 3680, 3681, 3681/1, 3683, 3684, 3685, 3685/1, 3687, and 3689/1, having no arrangement for filling them from a reservoir, a piece of Rubber Tubing should be attached to the bent tube and the end of the Rubber Tubing put in the liquid, with which the burette is to be filled. A small piece of Rubber Tubing is attached to the straight tube. By suction from the straight tube the burette can be filled. As soon as the liquid rises above the zero point, the suction should be stopped, when, the bent tube acting as a syphon, the liquid will be brought to the zero point.

3. In case it is desired to fill the burettes, (enumerated under section 2,) from an elevated reservoir, same should be connected by Rubber Tubing with the straight tube. As soon as the liquid commences to flow from the bent tube, the Rubber Tubing should be disconnected, when, the bent tube acting as a syphon, the liquid will be brought to the zero point.

4. Should there be any objection to disconnecting the Rubber Tubing as stated in section 3, an additional straight glass-tube can be inserted in the Rubber Stopper. As soon as the liquid commences to flow from the bent tube, the supply should be stopped, when, the bent tube acting as a syphon, the liquid will be brought to the zero point.

It is without any doubt the most simple means ever devised for bringing the liquid, after filling a burette, automatically to the zero point. Any chemist can easily put it together. If desired we furnish it with any burette at an additional cost for each burette of .....

\*3680/3—Burettes, Mohr's, with glass stop-cock, with side tube for filling from reservoir.

Divided into.....	25 $\frac{1}{16}$	50 $\frac{1}{16}$	100 $\frac{1}{16}$	100 cc. $\frac{1}{16}$
	\$2 10	2 75	3 50	3 90

3680/4—Burette Attachment, according to Henry Heil, for bringing the liquid, after filling a burette, automatically to the zero point, for Burettes No. 3680/1 and 3680/3. For full description and price of same see No. 3680/2.

\*3681—Burettes, Mohr's, improved by H. H. C. Co., with two sides white enameled, the remaining sides transparent, so that light or dark liquids can be read off with equal rapidity and accuracy, to be used with spring clamp. Form like No. 3680.

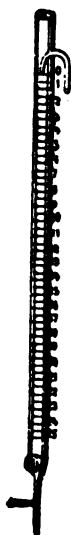
Divided into.....	50 $\frac{1}{16}$	100 $\frac{1}{16}$	100 cc. $\frac{1}{16}$
	\$2 15	2 70	3 25

\*3681/1—Burettes, Mohr's, improved by H. H. C. Co., with two sides white enameled, the remaining sides transparent, so that light or dark liquids can be read off with equal rapidity and accuracy, with Geissler's stop-cock. Form like No. 3683.

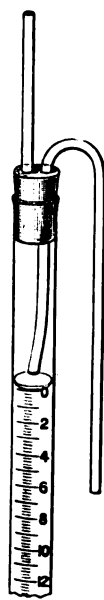
Divided into.....	50 $\frac{1}{16}$	100 $\frac{1}{16}$	100 cc. $\frac{1}{16}$
	\$3 10	3 75	4 35



3680



3680/1



3680/2



3680/3

3681  
3681/1

3683



3683

# APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

3681/3—Burette-Attachment, according to Henry Heil, for bringing the liquid, after filling a burette, automatically to the zero point. For Burettes No. 3681 and 3681/1. For full description and price of same see No. 3680/2.

3682—Burette, according to Knoepfler. Complete Apparatus for titration, see No. 2308/4.

\*3683—Burettes, according to Schellbach, with blue enameled stripe on white enameled background, giving a definite meniscus; for use with pinchcock.

Divided into.....	50 $\frac{1}{16}$	100 $\frac{1}{16}$	100 cc. $\frac{1}{16}$
	\$2 15	2 70	3 25

3684—Burettes, according to Schellbach, with blue enameled stripe on white enameled background, giving a definite meniscus; same as No. 3683, but with Geissler's stop-cock, as shown in Fig. 3685.

Divided into.....	50 $\frac{1}{10}$	100 $\frac{1}{5}$	100 cc. $\frac{1}{10}$
	\$3 40	3 75	4 35

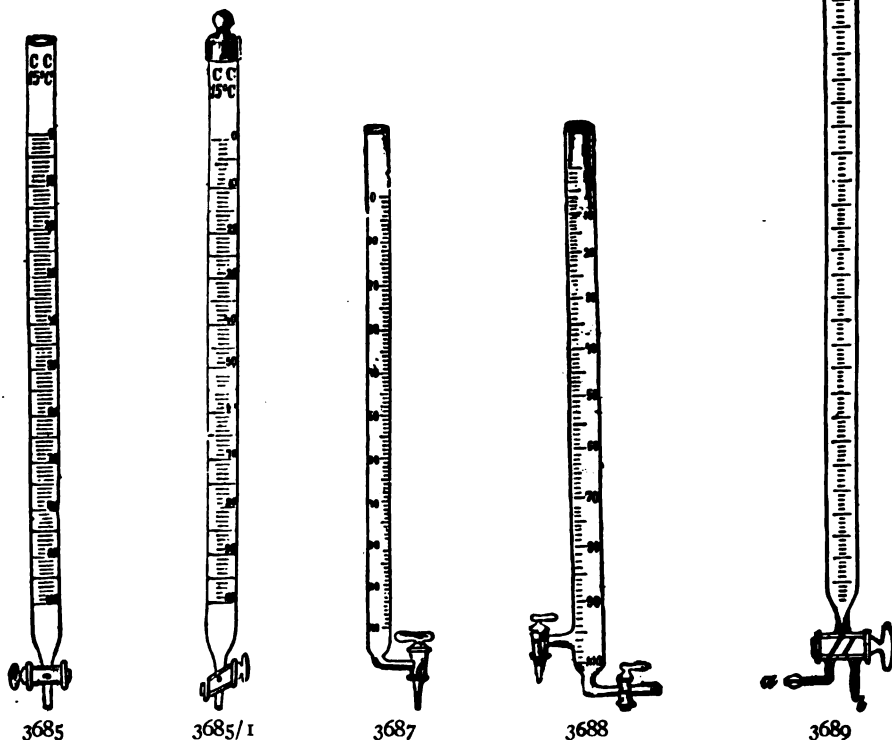
\*3685—Ditto, Mohr's, with Geissler's stop-cock.

Divided into....	10 $\frac{1}{10}$	25 $\frac{1}{4}$	50 $\frac{1}{2}$	100 $\frac{1}{5}$	100 cc. $\frac{1}{10}$
	\$1 65	1 75	2 25	2 40	2 85
					3 30

\*I 3685/1—Burettes, Mohr's, with Geissler's stop-cock, angle of 45°. Cap shown on illustration not included.

Divided into.....	25 $\frac{1}{10}$	50 $\frac{1}{2}$	50 $\frac{1}{2}$	100 $\frac{1}{5}$	100 cc. $\frac{1}{10}$
	\$2 80	3 10	3 35	3 90	4 10

REMEMBER OUR DISCOUNT.



\*3687—Burettes, Fresenius', with side stop-cock.

Divided into.....	25 $\frac{1}{10}$	50 $\frac{1}{2}$	100 cc. $\frac{1}{10}$
	\$1 75	2 40	3 30

3687/1—Burette-Attachment, according to Henry Heil, for bringing the liquid, after filling a burette, automatically to the zero point. For Burettes No. 3683, 3684, 3685, 3685/1 & 3687. For full description and price of same see No. 3680/2.

\*3688—Burettes, according to A. Sauer, with extra stop-cock to connect with reservoir for refilling.

Divided into.....	25 $\frac{1}{10}$	50 $\frac{1}{2}$	100 cc. $\frac{1}{10}$
	\$3 25	3 75	4 50

\*3689—Burettes, with new stop-cock for charge and discharge.

Divided into.....	25 $\frac{1}{10}$	50 $\frac{1}{2}$	100 cc. $\frac{1}{10}$
	\$2 80	3 75	4 35



\*3689/1—All burettes with stop-cock can be provided with new stop-cock, fig. 3689/1 at an additional charge of 33½ per cent, if imported to order. We keep on hand style No. 3685 50 cc. divided in 10

\$ 3 20

3689/3—Burette-Attachment, according to Henry Heil, for bringing the liquid, after filling a burette, automatically to the zero point. For Burettes No. 3688, 3689 and 3689/1. For full description and price of same see No. 3680/2.

\*3690—Burettes, Rammelsberg's.

	25	50	100 cc.
Divided into.....	10	10	10
	\$1 50	2 00	2 40

\*3700—Ditto, Geissler's, with glass rod inside, ground into the bottom, and tubulature near top.

	25	50	100 cc.
Divided into.....	10	10	10
	\$1 55	2 50	3 10



3690



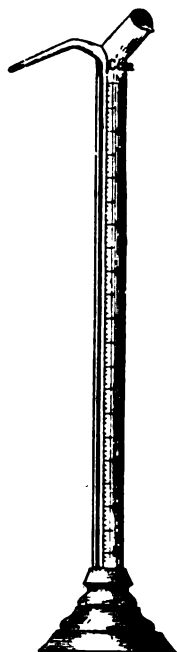
3700



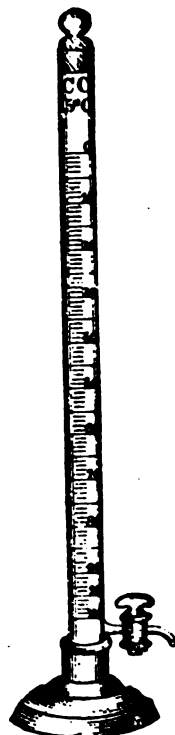
3689/1



3711



3710



3710/1

**APPROXIMATE EQUIVALENTS.**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*3710—Burettes, Geissler's Chameleon, on wooden foot, with inside lateral tube running to the bottom.

	10	10	20	25 cc.
Divided into.....	10	10	10	10
	\$1 10	1 20	1 30	1 55

\*I 3710/1—Burette, Geissler's, with stop-cock and hollow stopper, on polished wooden foot.

	25	50	100 cc.
Divided into.....	10	10	10
	\$2 50	3 10	3 75

All burettes enumerated above are of the best manufacture and graduated with the utmost accuracy.

\*I 3711—Burettes for weighing, Ripper's (Chem. Ztg., 1892.) Each.... 5 00

I 3711/1—Ditto, ditto. Set of two burettes complete, with support and aluminium suspenders..... 18 00

3712—Burette for Oil, Koninck's. See No. 2240/1.

**\*I 3713—Burettes, for dispensing liquids in larger quantity; with glass stop-cock.**

Capacity,	250	500	1000	2000cc.
Each,	\$3 75	5 00	6 25	7 50

We can also furnish them graduated in ounces at an advance of 10%.

**\*3714—Burette, capable of delivering minute drops; with support and rubber tube (Blair's Anal. of Iron, p. 208)**

\$ 8 00

**\*3715—Ditto. Uehling's (Blair's Anal. of Iron, p. 208)**

8 30

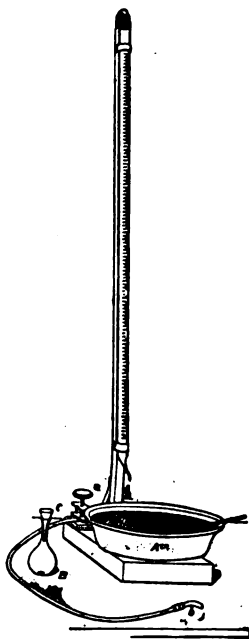
**\*3715/1—Ditto. ditto, another form**

7 50

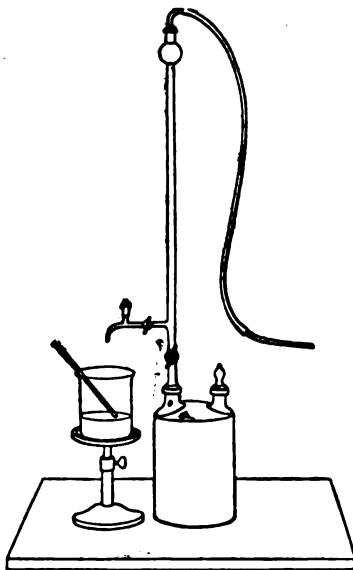
REMEMBER OUR DISCOUNT.



3713



3714



3715



3715/1

**\*3716—Burette, Automatic, Heil's, complete, with reservoir of about 2 liters.** Burette is filled by suction. This automatic burette has the advantage over all other automatic burettes, that it can be cleaned easily. It consists of a burette with a glass stop-cock, held by a clamp, with a perforated rubber stopper inserted in the upper part, provided with a bent suction tube with rubber tubing and a bent glass-tube for bringing the liquid automatically to the zero point, the superfluous liquid syphoning back into the reservoir. The zero point tube is connected with a long bent glass-tube leading to the bottom of the reservoir, a rubber stopper being used for the reservoir, into which are inserted two bent glass-tubes, one as an air-vent and one reaching also to the bottom of the reservoir and having a piece of rubber tubing attached, for refilling the reservoir by syphoning from any elevated vessel, starting the flow by means of suction from the air-vent tube. When put up and zero point tube properly inserted, it need not be disturbed unless the burette is to be cleaned. (Illustr. p. 169.)

Each,	25cc. in 1 <sup>1</sup> / <sub>2</sub>	50cc. in 1 <sup>1</sup> / <sub>2</sub>	100cc. in 1 <sup>1</sup> / <sub>2</sub>
	\$5 00	5 65	6 55

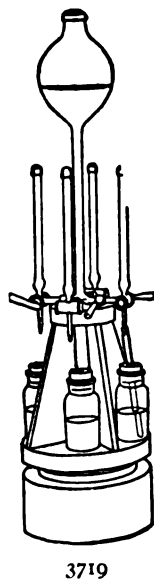
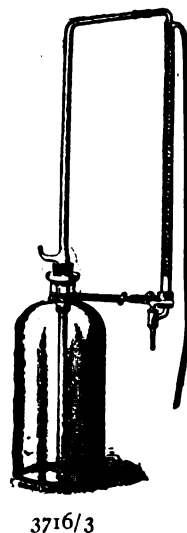
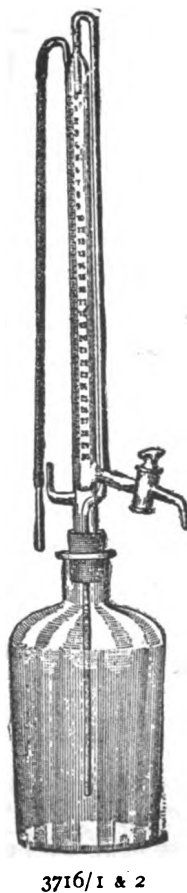
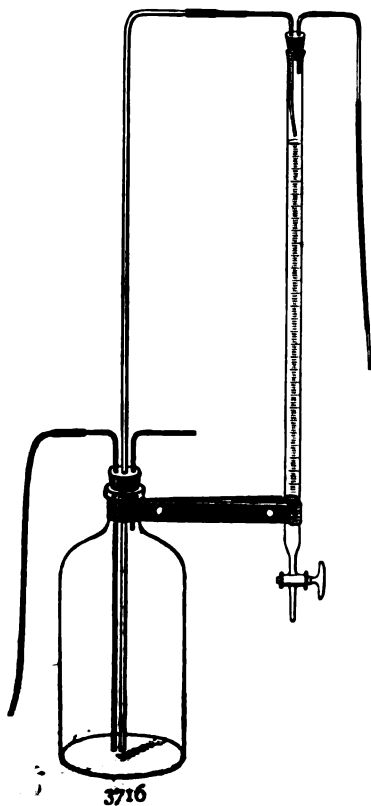
**\*3716/1—Burette, Automatic, according to Squibb, complete with reservoir.** A convenient form of self-filling automatic burette. The overflow syphons back into the reservoir. (Illustr. p. 169.)

25cc. 1 <sup>1</sup> / <sub>2</sub>	50cc. 1 <sup>1</sup> / <sub>2</sub>
\$6 75	7 50

**\*3716/2—Ditto. ditto, same with double rubber bulb for filling in place of mouth-piece.** (Illustr. p. 169.)

25cc. 1 <sup>1</sup> / <sub>2</sub>	50cc. 1 <sup>1</sup> / <sub>2</sub>
\$8 25	9 00

- \*3716/3—**Burette, Automatic**, with clamp for burette. The over-flow syphons back into the reservoir, leaving the burette filled to the zero point.
- |                        |                      |                      |
|------------------------|----------------------|----------------------|
|                        | 25cc. $\frac{1}{10}$ | 50cc. $\frac{1}{10}$ |
| Without ground joints, | \$6 75               | 7 50                 |
| With ground joints,    | 9 00                 | 9 75                 |
- \*3716/4—Ditto, according to Hildesheimer, with side tube for bringing the liquid automatically to the zero point, and with side tube for connection with reservoir.
- |  |                      |                      |                      |
|--|----------------------|----------------------|----------------------|
|  | 25cc. $\frac{1}{10}$ | 50cc. $\frac{1}{10}$ | 100cc. $\frac{1}{8}$ |
|  | \$2 75               | 3 35                 | 4 25                 |
- 3716/5—Ditto, ditto, with glass stop-cock.
- |  |                      |                      |                      |
|--|----------------------|----------------------|----------------------|
|  | 25cc. $\frac{1}{10}$ | 50cc. $\frac{1}{10}$ | 100cc. $\frac{1}{8}$ |
|  | \$3 75               | 4 35                 | 5 50                 |



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

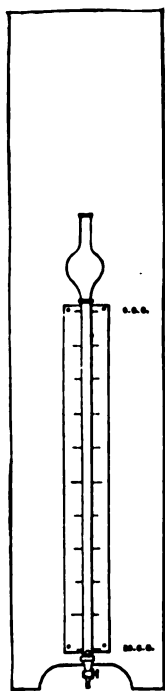
**Burette, Automatic, Knoepfler's.** See No.2308/4.

- \*3719—**Burette Apparatus**, consisting of 4 burettes, reservoir, etc., on stand, for rapid delivery of known volumes (Blair's Anal. of Iron, p. 164)

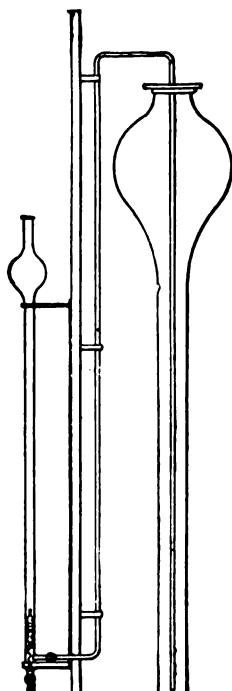
\$ 30 00

*3719/1—Burette and Reservoir, Jones', for volumetric determinations with Potassium Permanganate, etc. Burette with double stop-cock, feed tube and 2-liter reservoir; mounted on sliding board with extra scale on milk glass .....	\$ 27 00
*3720—Burette-Attachment, for connecting the burette with a reservoir to refill, consisting of T tube, glass jet, rubber connections and two Mohr's Spring Clamps .....	62
*3725 Burette Floats, Erdmann's, .....	30
*3726—Ditto, ditto, new style, with glass points, preventing adhering to the walls .....	50
*I 3728—Ditto, ditto, according to Beutell; each .....	50
*3730—Burette Jets, glass; per doz., 37 cts.; each .....	05
3731—Ditto, with rubber connection and nickel-plated spring-clamp .....	25
3732—Burette Caps, to protect the inside of burettes from dust; each, 12 cts.; per doz. ....	75

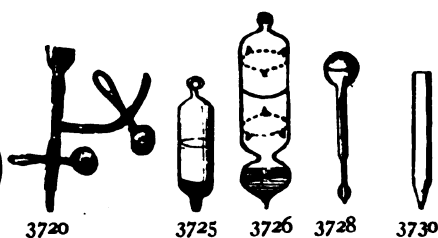
REMEMBER OUR DISCOUNT.



3719/1



3719/1



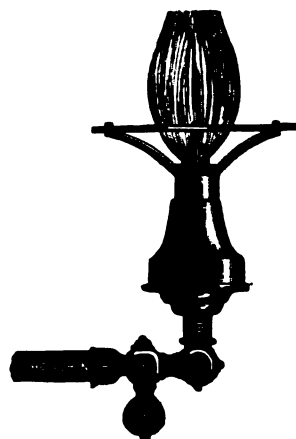
3720

3725

3726

3728

3730



3735

**\*3735—Burner, Houchin's Patent Volunteer Gas Heater, No. 1039.**

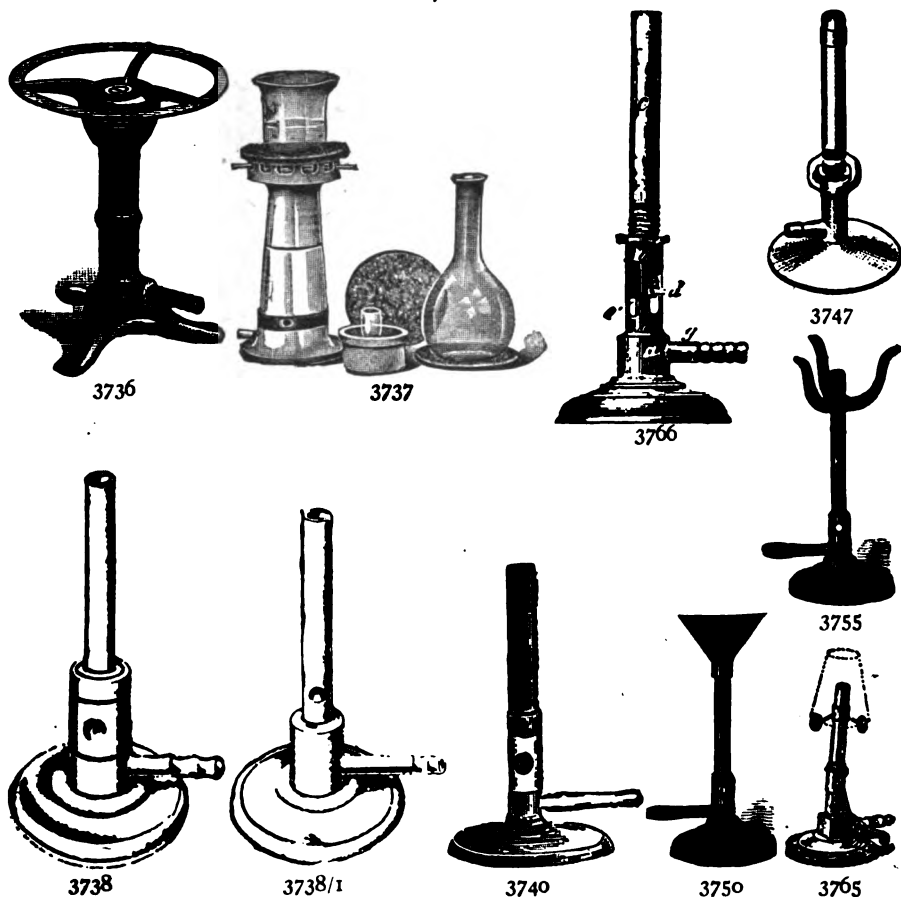
It is a perfect Bunsen Burner and will fit any ordinary gas burner. It can be used for a variety of purposes; for the nursery and for family use it has no equal. Its combustion is perfect, hence there is no smell of unconsumed gas, and it will not blacken any vessel. Each, 35 cts.; per dozen .....

3 75

**\*3736—Burner, Bunsen's, Henry Heil Chemical Co.'s modification,** made of iron, japanned, with nickel-plated ring, for supporting beakers, flasks, dishes, etc. Burner tube 19 mm. outside diameter, widened at the top to 41 mm, giving a powerful flame, which is spread in a circle by means of a round cover fastened to the tube. Total height, 85 mm. The burner has a small screw at the bottom of base, which, when unscrewed, allows the gas inlet-tube to be taken out and cleaned. This burner supplies a long-felt want, representing a Bunsen Burner of great power with tripod complete. It will heat a pint of water to the boiling point in 4 minutes. (Illustr. p. 171.) Each, \$1.00; per doz. \$10.00; per gross .....

100 00

*3737—Burner, Chaddock's, porcelain, for use in hoods, where metal soon corrodes .....	\$ 2 90
*I 3738—Burner, Bunsen, made of Royal Meissen Porcelain, No. 1, 16 cm. high; each .....	2 90 3/10
Extra Tubes for Burner No. 3738; each .....	25 .40
*I 3738/1—Ditto, ditto, No. 2, 14 cm. high; each .....	2 55 2/10
Extra Tubes for Burner No. 3738/1; each .....	25 .40
*3740 Burner, Bunsen's, with air regulation, very substantially made, with screw joints. This burner is so constructed that the flame cannot recede. The best regular Bunsen burner in the market. Per doz., \$6 00; each .....	55
3745—Ditto, ditto, larger, tube 13 mm. wide, see figure 3740. Per doz... ..	8 00
Each .....	75

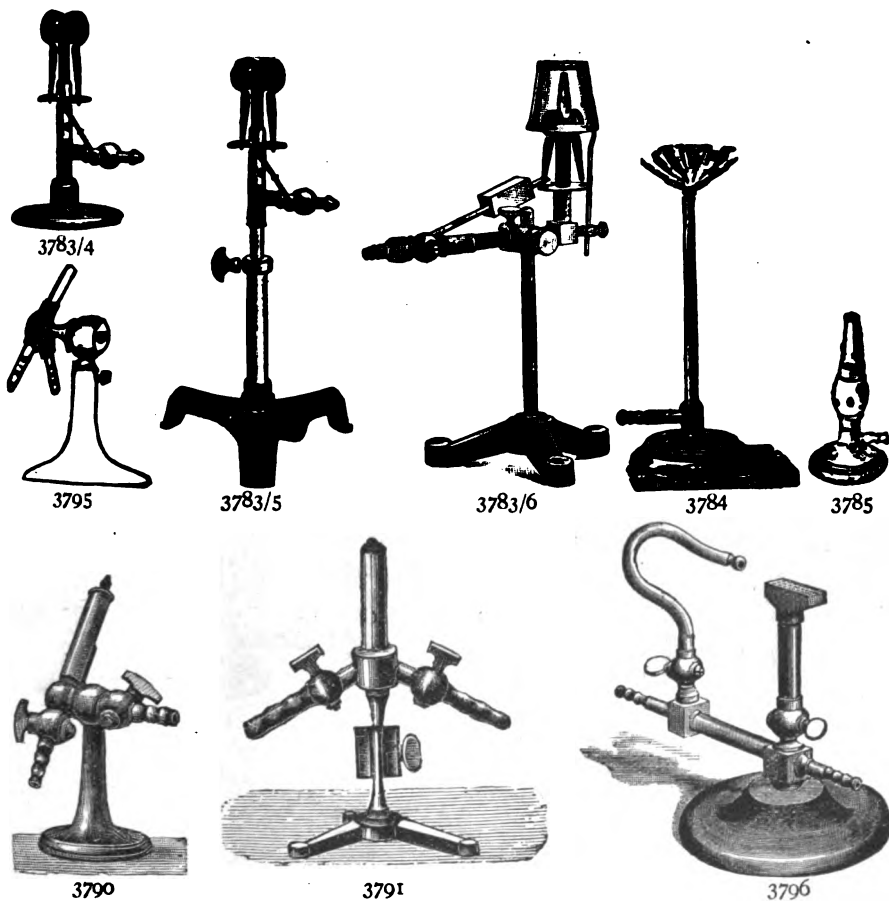


APPROXIMATE EQUIVALENTS:  
 1 inch = 25 mm; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

*3747—Burner, Bunsen's Safety. The burner tube serves as air regulator and gives a perfect flame; with safety top; each \$0 75; per doz. ....	8 25
3747/1—Ditto, same as No. 3747, but without safety top. A most excellent burner; each, \$0 50; per doz. ....	5 50
*3750—Burner, Bunsen's, with wing top, for bending tubes .....	80
*3755 Ditto, ditto, with tripod, for supporting small capsules, etc. ....	80
3760—Ditto, ditto, with air regulator and stop-cock on gas inlet tube .....	1 50
*3765—Ditto, ditto, with lever attachment to regulate the flow of air and gas at the same time .....	2 50
*3766—Ditto, Muencke's, with milled ring, which moves the burner tube and regulates the air supply .....	1 60



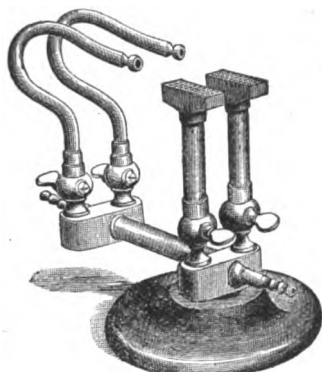
*3783/5— <b>Burner, Koch's Safety</b> , on adjustable stand; small	large
Each, \$9 00	9 75
*3783/6—Ditto, on adjustable stand, with weight on stop-cock instead of spring; large	\$ 10 65
*3784— <b>Burner, to illuminate the laboratory table</b> . Without stop-cock	1 25
3784/1—Ditto, ditto, with stop-cock	2 00
*3785—Ditto, <b>for gas</b> ; made of soap-stone; for use in arsenic analysis	2 75
*3790—Ditto, <b>Bunsen's blast, or blast lamp</b> , most improved form	4 50
*3791— <b>Burner, Blast Lamp, Wiesnegg's</b> , French form, with two stop-cocks and universal joint	5 60
*3795—Ditto, <b>Blast Lamp</b> , as used in the School of Mines, Columbia College, designed by <b>Dr. Waller</b>	5 00



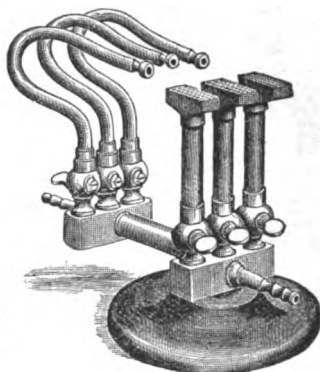
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*3796— <b>Burner, Glass-Blower's</b> , No. 1; each	4 15
Per set of two	7 50
3796/1— <b>Burner, Glass-Blower's</b> , No. 1; with legs to be screwed on the table, and with straight tube, as shown in fig. 3797/1; each	4 15
Per set of two	7 50
3796/2— <b>Burner, Glass-Blower's</b> , No. 1; with legs to be screwed on the table, and with tube bent down, as shown in fig. 3797/2; each	4 15
Per set of two	7 50
*3797— <b>Burner, Glass-Blower's</b> , No. 2 (Illustr. p. 174); each	6 40
Per set of two	11 65
*3797/1— <b>Burner, Glass-Blower's</b> No. 2; with legs to be screwed on the table and with straight tube (Illustr. p. 174); each	6 40
Per set of two	11 65
*3797/2— <b>Burner, Glass-Blower's</b> , No. 2; with legs to be screwed on the table, and with tube bent down (Illustr. p. 174); each	6 40
Per set of two	11 65

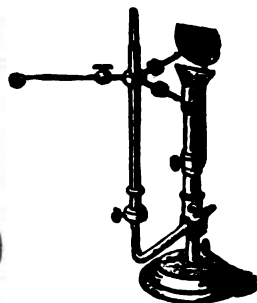
*3798—Burner, Glass-Blower's, No. 3; each.....	\$ 8 80
Per set of two.....	15 85
3798/1—Burner, Glass-Blower's, No. 3 with legs to be screwed on the table, and with straight tube, as shown in fig. 3797/1; each.....	8 80
Per set of two.....	15 85
3798/2—Burner, Glass-Blower's, No. 3; with legs to be screwed on the table, and with tube bent down, as shown in fig. 3797/2; each.....	8 80
Per set of two.....	15 85
*3800—Ditto, Bunsen's, low form.....	66
*3805—Ditto, ditto, Finkner's form. with arrangement to regulate the flow of air and gas simultaneously.....	2 50



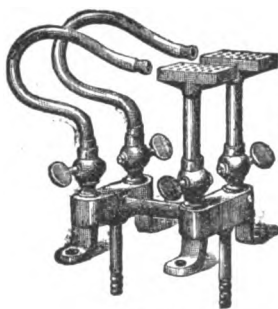
3797



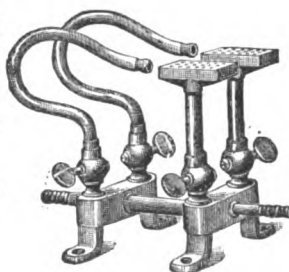
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3810



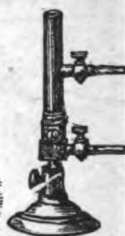
3797/2



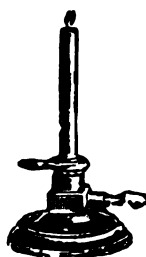
3797/1



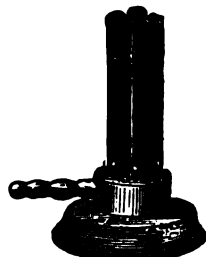
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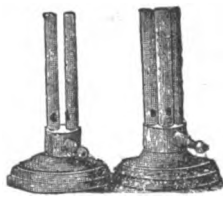
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3806



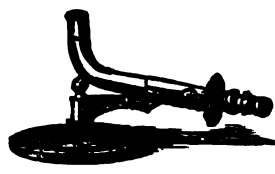
3822



3820



3821



3800

*I 3806—Burner, Finkner's, with pilot flame.....	3 00
*3810—Burner, Bunsen's, Desaga's form, for spectroscopic work.....	5 75
*3815—Ditto, ditto, for high temperatures, burning oxygen with illuminating gas.....	5 00
*3820—Ditto, Bunsen's, with 2 tubes.....	1 65
*3821—Ditto, ditto, with 3 tubes.....	1 90
*3822—Ditto, ditto, with 4 tubes.....	2 50
3823—Ditto, ditto, with 6 tubes.....	3 50
3824—Ditto, ditto, with 8 tubes.....	5 00
3825—Ditto, ditto, with 10 tubes.....	6 25

REMEMBER OUR DISCOUNT.

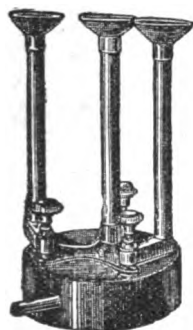


\*I 3826—**Burner, Bunsen's, Improved by Rab**, with screw stop-cocks; each burner on movable arm, so that it can be used as a 3-tube Bunsen Burner, or the burners can be placed in a row ..... \$ 7 00

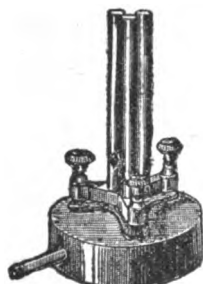
\*3827—**Burners in Ring Form**, to be attached to any ring stand.

	Diameter	7½ cm.	10 cm.	12 cm.	15 cm.
1. The Ring as shown in illustration.		\$1 05	1 35	1 70	2 00
2. The Ring with device for producing a blue flame .....		1 55	1 85	2 20	2 50
3. If provided with clamp fastener No. 4135; <b>additional</b> .....		25	25	25	25
4. With clamp fastener and iron support; <b>additional</b> .....		1 15	1 15	1 15	1 15
5. If provided with stop-cock, <b>additional</b> .....		95	95	95	95

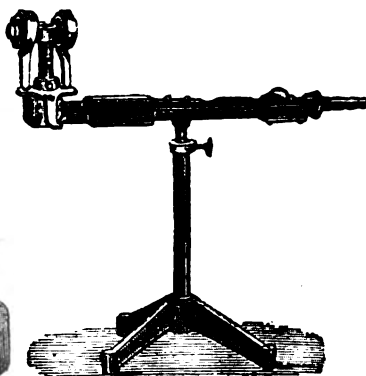
\*I3828 — **Burners, Dr. R. Koch's Safety Burners**, with automatic cut-off for gas. With One Burner. With Two Burners.  
Each, \$13 10 \$22 50



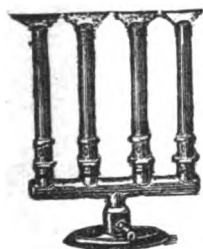
3826



3826



3828



3830



3827



3829

\*3829—**Burners, Fletcher's Safety.**—Burners are frequently required for limited spaces where no side projection is possible. These will be found perfect in every detail, of the highest power possible for the size, can be turned down to the merest flicker without lighting back, and can be mounted on tubes in any form or number when very high powers are required. They are made in three sizes, all in brass. The gauze slides in, and in case of accident can be replaced in a few seconds. The number gives the maximum gas consumption in cubic feet per hour at  $\frac{1}{8}$  pressure.

If a number are placed together, on a tube or ring, they must be at least one-fourth the diameter of the top apart.

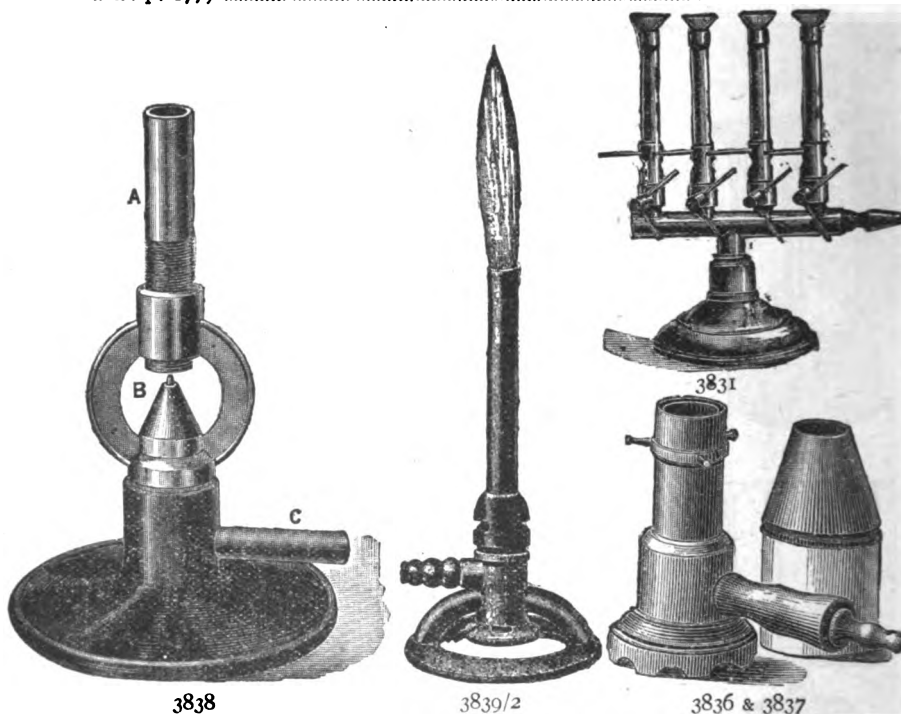
		Diam. across top of Gauze.	Height.	
No. 5 SB.	Without stand.....	22 mm.	95 mm.	\$1 03
No. 10 SB.	Without stand.....	31 mm.	120 mm.	1 35
No. 14 SB.	Without stand.....	38 mm.	152 mm.	1 75
No. 5 SBM.	On brass stand.....	22 mm.	120 mm.	1 98
No. 10 SBM.	On brass stand.....	31 mm.	145 mm.	2 38
No. 14 SBM.	On brass stand.....	38 mm.	178 mm.	3 17

\*3830—**Burner, Bunsen's**, in sets of 4, arranged in a line, for heating long tubes, etc..... 5 00

**APPROXIMATE EQUIVALENTS!**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*3831—**Burner, Bunsen's**, in sets of 4, with stop-cock for each burner ..... \$ 7 25
- \*3836—**Burners, Erlenmeyer's**, giving an intensely hot flame, almost equal to a blast lamp, most powerful gas burner made; with chimney.
- |                    |        |      |      |      |        |
|--------------------|--------|------|------|------|--------|
| Diameter of flame, | 20     | 25   | 30   | 40   | 50 mm. |
| Each,              | \$4 80 | 5 60 | 6 40 | 9 75 | 11 25  |
- \*3837—Ditto, ditto, with clay cylinder and iron chimney.
- |                    |        |      |      |       |        |
|--------------------|--------|------|------|-------|--------|
| Diameter of flame, | 20     | 25   | 30   | 40    | 50 mm. |
| Each,              | \$5 80 | 6 60 | 7 40 | 10 75 | 12 25  |
- \*3838—**Burner, Bunsen's**, for gasoline, gas, or natural gas, **THE BEST BURNER MADE FOR THAT PURPOSE.** ..... x 67
- Per dozen, \$18.75. Each
- \*3839—**Burner, Bunsen's**, for gasoline, gas and natural gas. (Illustr. p. 177) ..... 1 00

REMEMBER OUR DISCOUNT.



- \*3839/2—**Burner, Venable's, Gasoline.** Made entirely of brass; per doz. each, 19 50
- \*\*3839/3—**Burner, Adjustable, Bunsen, Nos. 5 G, H and K.**—FOR BURNING GAS OF VARIABLE QUALITY.—In this burner the size of the orifice through which the gas escapes is adjusted by turning the milled capnut seen inside the arm which supports the upright tube. The air supply is adjusted by screwing the arm up or down, it being threaded and moving upon the stem which passes through its lower end. It follows that any desired quantity of flame can be produced with it, and that it will burn any kind or quality of gas, rich or poor. 1 67

Its adjustability renders it a favorite burner for those using gasoline gas, or the mixture of gasoline vapor and air made by gas machines.

This burner is furnished, when required, with an adjustable support for holding small flasks or evaporating dishes, or an iron plate for blueing small articles.

It is well made and strong, and is mounted either upon a cast iron or brass base, as may be desired. Total height, 16.5 cm. (Illustr. p. 177.)

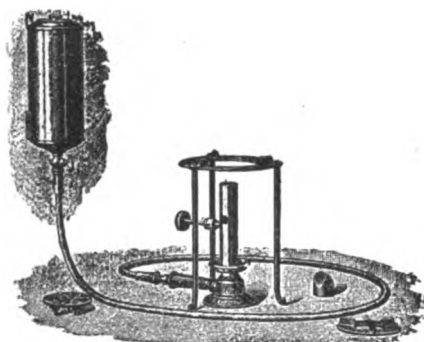
## PRICES.

- |          |   |      |
|----------|---|------|
| No. 5 G. | Adjustable Bunsen, on iron base .....                       | 1 60 |
| No. 5 H. | Adjustable Bunsen; on brass base, turned and polished ..... | 1 75 |
| No. 5 K. | Adjustable Bunsen, iron base, with support .....            | 1 80 |
|          | Support only .....  | 1 00 |

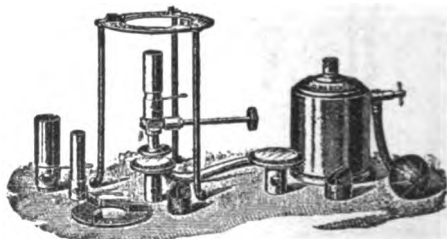


- \*I 3842—**Burner, for gasoline, Barthel's, without wick.** This is the most perfect gasoline burner for chemical work. Being substantially constructed and entirely of brass, it is perfectly safe and cannot leak. It gives a flame, which can readily be adjusted from a very small to a powerful blast of a maximum temperature of 2000° Celsius. **Only the Burner with Reservoir and Rubber Bulb.....** \$ 11 25  
 Tripod..... 80

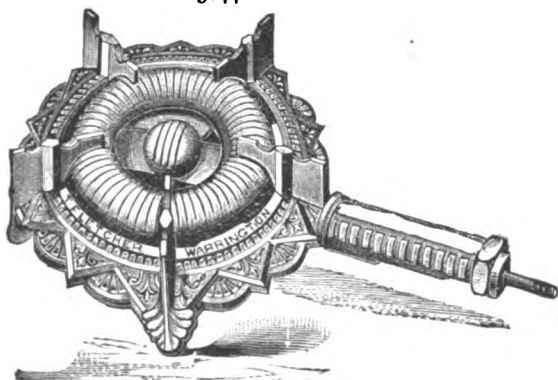
To give a variety of flame in size and shape, extra burners can be obtained as per cut, for large flame \$1 50 each; for smaller flame \$0 75 each. Circular Burner small \$1 12 each; large \$1 50 each. Attachment for bending glass-tubes; each..... 40



3844



3842



3846



3845



3846/1

- \*I 3844—**Burner, for Alcohol, Barthel's, without wick.** It is very powerful and it cannot explode. Complete with 1½ meters flexible metallic tubing and reservoir, but without tripod and other attachments.

	small	large
Each	\$12 00	13 50
Tripods extra, each	85	1 12
Equaling in power	2	4 ordinary Bunsen Burners.

- \*3845—**Burner, according to Breitenlohner,** for kerosene or turpentine.... 6 25

- \*3846—**Burner, Fletcher's Radial, No. 1 R and No. 2 R.**

No 1 R Burner Ring, 95 mm. diam. [maximum gas consumption 12 ft (=0.35 Cbmtr.) per hour]..... 2 40

No. 2 R. Burner Ring, 127 mm. diam. [maximum gas consumption 18 ft (=0.50 Cbmtr.) per hour]..... 3 15

No. 1 R, for gasoline gas..... 3 60

No. 2 R, for gasoline gas..... 4 70

- \*3846/1—**Burner, Fletcher's Radial, No. 3 R.** A good burner for the laboratory..... 1 66

**\*3847—Burner, Fletcher's new triple concentric Burner No. 56.**

This is 21.5 cm. outside diam., the three burners being in one substantial casting. It has been designed without consideration of cost, as the most powerful concentric ring burner it is possible to produce; giving at command exact powers and exact sizes of flames. Each ring will bear turning down to double circle of minute points of flame, which will burn equally and steadily all around. Gas consumption of center ring 0.25 Cbmtr. per hour, middle ring, 0.57 Cbmtr., outer ring, 0.68 Cbmtr. The three combined, 1.5 Cbmtr. per hour.....

\$ 28 50

**\*3850—Ditto, Fletcher's New Evaporating, for glass and porcelain vessels, and general laboratory work. This burner is a great improvement on the ordinary coil burner, as no currents of cold air can reach the vessel. It burns with a blue, smokeless flame. Height about 38 mm. Sizes 10 to 15 cm. are made of iron, the larger sizes of copper.**

10cm. 13cm. 15cm. 19.5cm. 23.5cm. 27cm. 30.5cm.

\$1 50 2 00 3 00 5 00 5 83 6 65 8 30

**\*3851—Ditto, ditto, 10 cm. size, in cast-iron frame, 21.5 cm. diameter, without wooden handle shown on illustration.....**

3 15

**\*3852—Ditto, ditto, 10 cm size, in sheet-iron frame, 15 cm. diameter.....**

3 00

**\*3853—Ditto, ditto, 10 cm. size, in sheet-iron frame, 15 cm. diam., with concentric rings.....**

3 50

**3854—Ditto, ditto 15 cm. size, the stove 20 cm. with concentric rings.....**

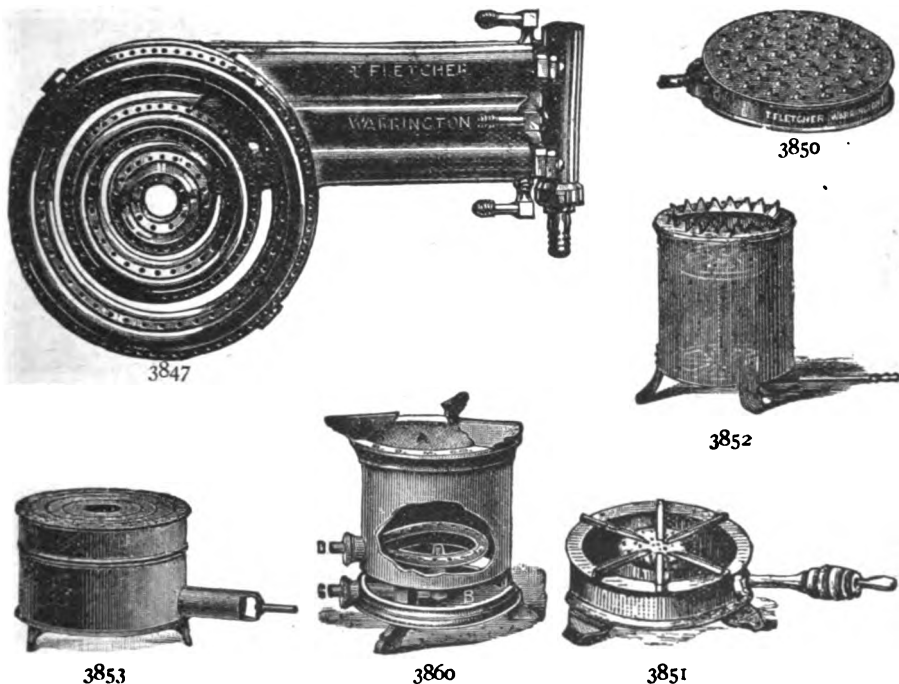
5 25

**3854/1—Ditto, ditto, ditto, the stove 25 cm. with concentric rings.....**

6 75

**3855—Ditto, ditto, ditto, the stove 30 cm. with concentric rings.....**

8 50



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

See also Stoves No. 8731, etc.

**\*3860—Burner, Fletcher's low temperature, No. 7A. This burner gives a complete range of temperature, from a gentle current of warm air to a clear red heat.....**

3 15

**\*3861—Ditto, ditto, No. 7, without blast pipe c.....**

2 77

**\*3866—Burner, Fletcher's solid flame, No. 466; simple, strong and of great power and adaptability (Illustr. p. 180).....**

3 15

**\*3866/1—Ditto, ditto, No. 466, for gasoline gas.....**

4 65

**\*3867—Burner, Fletcher's solid flame boiling Burner, No. 47 (Illustr. p. 180).....**

3 15

**\*3867/1—Ditto, ditto, No. 47, for gasoline gas (Illustr. p. 180).....**

4 65

**\*3867/2—Burner, Fletcher's solid flame boiling Burner No. 47A. Same as No. 3867—No. 47, but of smaller size (Illustr. p. 180).....**

1 60

**\*3867/3—Ditto, ditto, No. 47A, for gasoline gas (Illustr. p. 180).....**

2 80

\*3867/4—**Burners, Fletcher's Standard Boiling Burners No. 310-330.** These Burners are designed as a complete series of the highest and most perfect class, in the simplest possible form, and are in one casting. The support for vessels is broad, strong and steady, carrying all vessels, from the smallest to the largest. The burners are perfect in every detail of form and construction, and they are offered as examples of the best burners which it is possible to construct for ordinary uses.

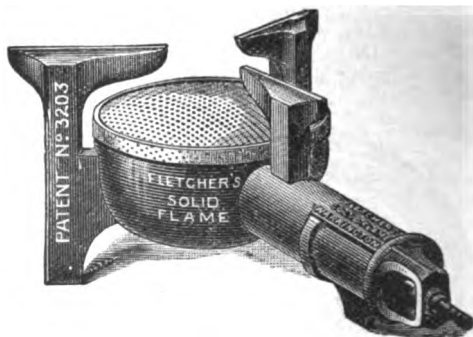
The maximum gas consumption at day pressure of gas (2.5 cm.) is given in the price list, and the same figures indicate the number of liters of water boiled in one hour in a light broad-bottomed copper vessel.

No. 330 has two concentric burners with two separate taps. The price includes taps complete for this size.

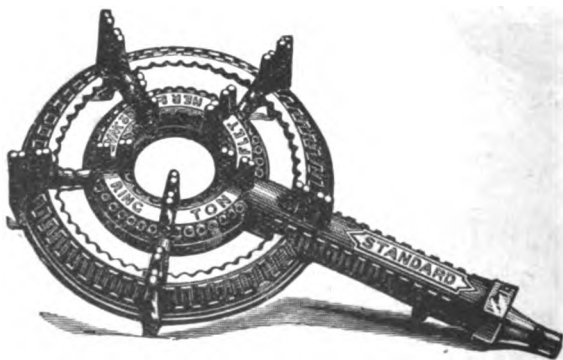
		Number of liters of water boiled in one hour in a light broad-bottomed copper vessel.	Diameter across support for vessels.	
No. 310. Standard Boiling Burner, 10 ft. (=0.28 Cbmt.)	per hour, 10 lit.	14cm.	\$ 2 38	
No. 315. Standard Boiling Burner, 15 ft. (=0.42 Cbmt.)	per hour, 15 lit.	17.8cm.	3 16	
No. 320. Standard Boiling Burner, 20 ft. (=0.57 Cbmt.)	per hour, 20 lit.	20.3cm.	3 95	
No. 330. Standard Boiling Burner, 30 ft. (=0.85 Cbmt.)	per hour 30 lit.	25.4cm.	11 85	



3866



3867, 3867/1, 2 &amp; 3



3867/4

\*3868—**Burner, Fletcher's special high power Burners, No. 52.**

The laws ruling the construction of heating burners as given in Mr. Fletcher's communication to the Gas Institute, and published in the Transactions for 1883, have been strictly adhered to in these burners, which, for their size, are unapproached in power by any burners in existence (Illustr. p. 181). The dimensions of these burners are as follows:

Size across the gauze surface.	Gas consumption in cubic ft.	Gas pipe required.
No. 52A. 7 cm. diam.	25 ft. (=0.70 Cbmt.) per hour.	9.5 mm. clear bore.
No. 52B. 10 cm. diam.	40 ft. (=1.11 Cbmt.) per hour.	13 mm. clear bore.
No. 52C. 15 cm. diam.	90 to 100 ft. (=2.5 to 2.8 Cbmt.) per hour.	19 mm. clear bore.
No. 52D. 20 cm. diam.	200 to 250 ft. (=5.6 to 7 Cbmt.) per hour.	25 mm. or 38 mm. clear bore.

The 15cm. and 20cm. sizes have no tripod or support for vessels, as the burners are too small to carry the vessels they will heat.

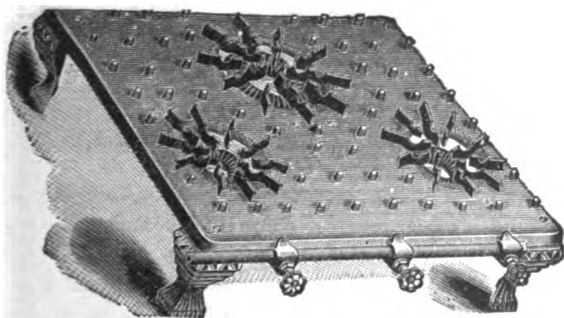
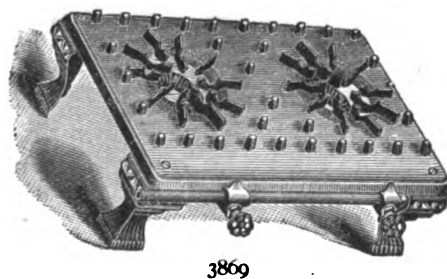
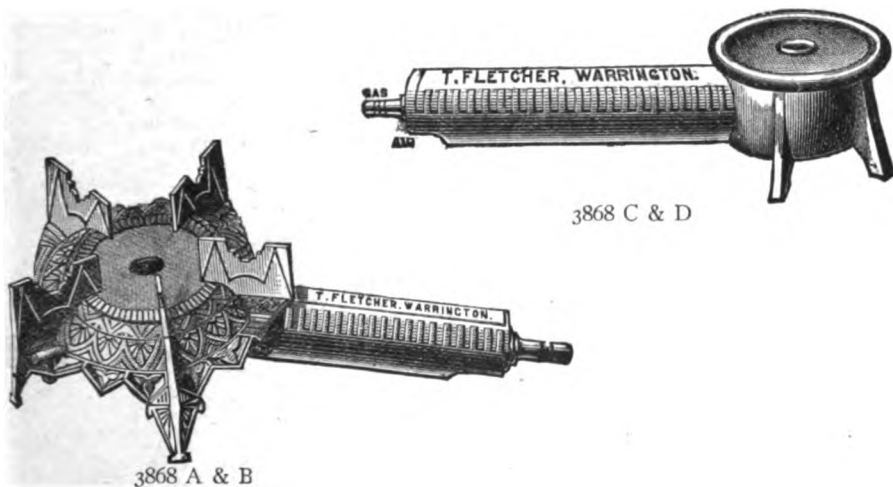
No. 52A.	No. 52B.	No. 52C.	No. 52D.
\$5 15	7 10	11 50	28 65

REMEMBER OUR DISCOUNT.

**\*3869—Burner, Fletcher's Hot Plate, No. 80,** with two Radial Burners, 9.5 cm. diam. Capacity, 9 or 10 ft. ( $\approx 0.25$  to  $0.28$  Cbmtr.) per hour each. The pins and the spider rings over the burners are the same height, giving a level surface for sustaining the vessel to be heated. Size of top plate  $29 \times 47.5$  cm.; distance between centers of burners, 25 cm.

For gas.....  
For gasoline gas.....

\$ 7 90  
8 70



3869/1

**\*3869/1—Burner, Fletcher's Hot Plate, No. 81.** This has two Radial Burners 9.5 cm. diam., and one 12.7 cm. diam. Capacity 10 and 15 ft. ( $\approx 0.42$  Cbmtr.) per hour, respectively. This, like the No. 80, presents a level surface, upon which the vessel to be heated is sustained. Size of top plate  $49.5 \times 57$  cm.; distance between centers of burners, 25.4 cm.

For gas.....  
For gasoline gas.....

11 85  
13 05

**APPROXIMATE EQUIVALENTS:**  
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

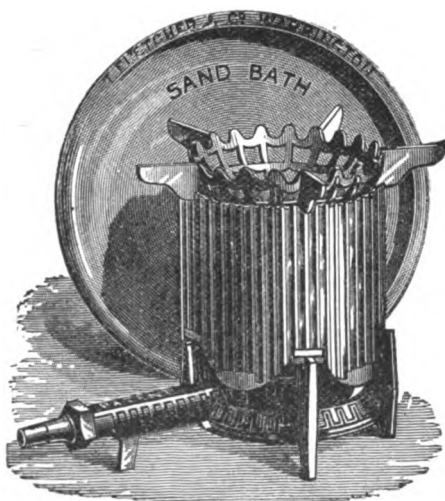
\*3869/4—**Burners, Fletcher's New Laboratory Burner No. 210 to 230**, with support for vessels and sandbath. The stand for vessels will carry round glass flasks, porcelain dishes or vessels with flat bottom of any size. The vessels can, by lifting the cylinder, be placed at different heights above the flame, which will burn steadily when turned down to its lowest point.

	No. 210	215	220	230
Diameter of support for flasks	10.8cm.	13.3cm.	17.8cm.	20.3cm.
Diameter of support for flat vessels	16.5cm.	19.0cm.	23.0cm.	28.0cm.
Diameter of sandbath	23.0cm.	25.4cm.	33.0cm.	38.0cm.
Price of Burner without Sandbath	\$7 15	8 70	11 85	19 80
Price of Sandbath	0 95	1 42	2 14	2 75

\*3869/5—**Burner, Special Gas**, used as a **Hot Plate**; so arranged as to give an even temperature to all parts of the plate.

	45 x 35	45 x 55	45 x 75	45 x 90 cm.
Each,	\$13 50	18 00	27 00	33 00

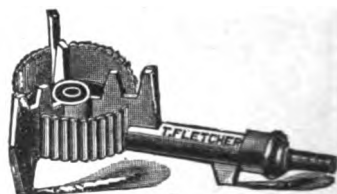
REMEMBER OUR DISCOUNT.



3869/4



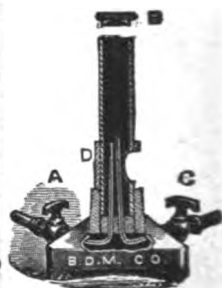
3869/5



3870



3880



3875

\*3870—**Burner, Fletcher's Argand Bunsen, No. 201**, with tripod; for gas.

9.5 mm size, gas consumption 2 ft. (= 0.06 cbmtr.) per hour....	\$ 1 03
13 mm. size, gas consumption 3½ ft. (= 0.10 cbmtr.) per hour....	1 50
19 mm. size, gas consumption 7 ft. (= 0.20 cbmtr.) per hour....	1 98

\*3875—**Ditto, Fletcher's Bunsen Blast, No. 5**, with upright blast for gas and air.....

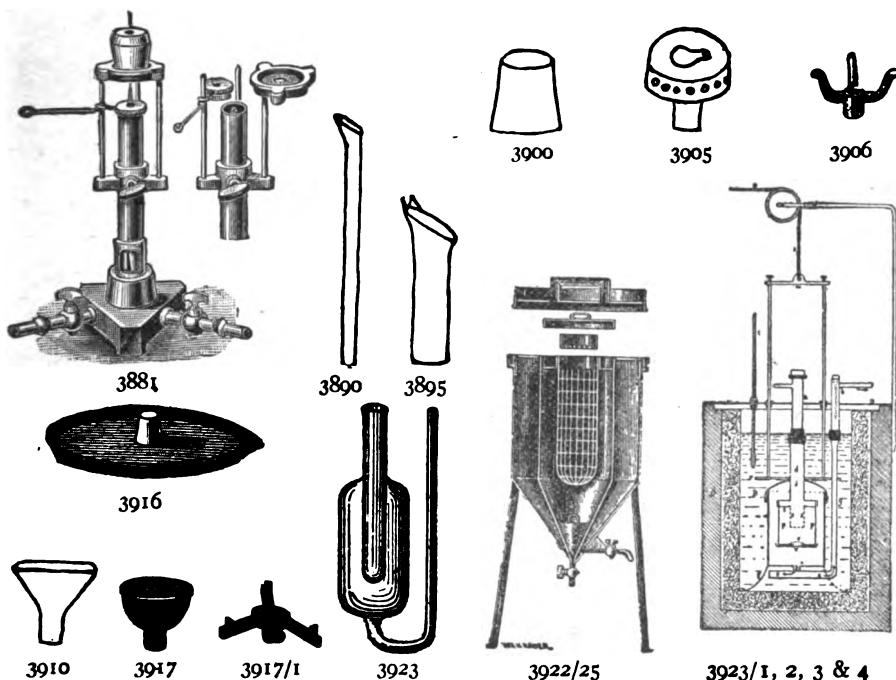
5 55

\*3880—**Ditto, Fletcher-Plattner blow-pipe furnace, for capsules or crucibles, 19 mm. diameter.**

Blow-pipe furnace with Bunsen's blast burner, No. 3875, taps for gas and air, and furnace support, without blower.....	6 75
Blow-pipe furnace, with bottom or side-hole and one crucible.....	40
Clay crucibles, per gross, \$3 75; per dozen.....	35
Clay capsules, per gross, 3 75; per dozen.....	35
Furnace support.....	95



*3881— <b>Burner</b> , Fletcher-Plattner blow-pipe furnace with Bunsen's blast burner and Lewis' furnace support.....	\$ 7 50
Lewis' furnace support alone, including cap.....	1 60
Blow-pipe furnace, with bottom or side hole, and one crucible.....	40
*3890— <b>Burner Attachment, blow-pipe tube</b> , to set in the burner.....	25
*3895—Ditto, ditto, short, to set over the burner, with rest for blow-pipe.....	25
*3900—Ditto, <b>Chimney</b> of sheet iron.....	25
*3905—Ditto, <b>Crown</b> , giving a round flame.....	50
*3906—Ditto, <b>Tripod</b> , to set on top of Bunsen's burners.	
Each.....	Regular size. Extra large.
	\$o 25 \$o 35
*3910—Ditto, <b>Wingtop</b> , the best attachment for bending glass tubes.....	25
*3915—Ditto, <b>Burner Fork</b> , for attaching to a support and supporting Bunsen burner; complete, with attachment for burner. (See No. 9011/1).....	53
*3916—Ditto, <b>Porcelain Plate</b> , to attach to Bunsen's burner in blow-pipe operations.....	75
*3917—Ditto, <b>Gauze Top</b> , giving a large round flame.....	37
*3917/1—Ditto, <b>Burner Star</b> .....	37



**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

3918— <b>Bursting Squares</b> . See Catalogue of Physical Apparatus.	
3920 <b>Callipers</b> . See Catalogue of Physical Apparatus.	
*13922/25— <b>Calorimeter, Ice</b> , Lavoisier's, of japanned zinc, with movable legs.....	29 90
*3923— <b>Calorimeter, Ice</b> , Bunsen's,	
	15 20 25 cm.
	\$o 95 \$1 10 \$1 50
*13923/1— <b>Calorimeter, Fischer's</b> , for determining the value of various fuels. Vessel made of silver, inner tray of platinum and nickel, and basket of platinum, with Normal Thermometer 0 to 50° C in 1° C complete. As the price of platinum varies, the price is only approximate.....	200 00
*13923/2—Ditto, the same apparatus, vessel being made of nickel-plated brass instead of silver. As the price of platinum varies, the price is only approximate.....	130 00
*13923/3—Ditto, the same apparatus, inner tray of nickel, basket of platinum. As the price of platinum varies the price is only approximate.....	120 00
*13923/4 Ditto, the same apparatus, inner tray and basket of nickel ....	110 00

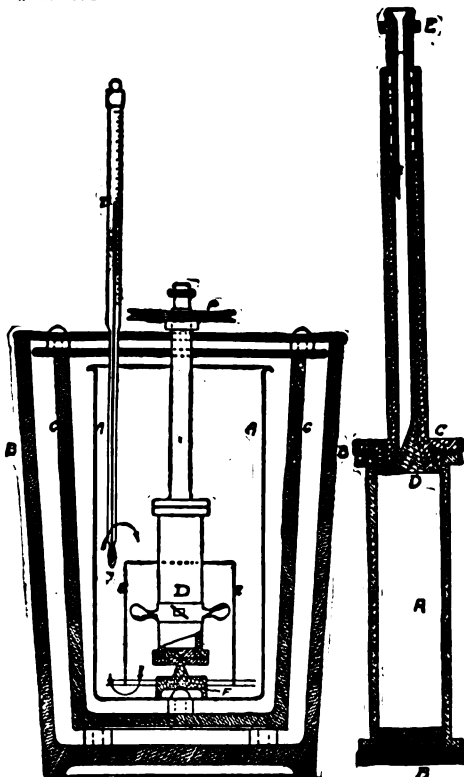
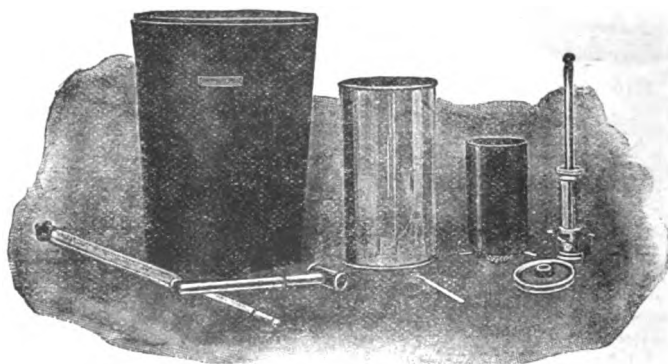
## \*\* 3923/5—Calorimeter, Standard, S. W. Parr's.

The marked features of the method are accuracy, simplicity, ease and rapidity of manipulation. Results are absolute. The operations are such as can be carried on by one not especially skilled in laboratory processes. Oxygen under high pressure is not used. The time consumed in conducting a test on a weighed and dried sample does not exceed 15 to 20 minutes. With this instrument a determination of the heat units has been made on the various types of fuel selected from widely different sources.

**CALORIMETER OUTFIT.**

The outfit consists of the apparatus as indicated in No. 3923/5, fig. 2, including a fine thermometer graduated to  $\frac{1}{10}^{\circ}$  F, a 2-liter measuring flask, chemical receptacle, measuring cup, 12.7 cm. 100 mesh brass sieve with bottom, chemicals sufficient for fifty determinations, special chemical for petroleum, etc., pincers, ignition wire, reading lens and camel's-hair brush. Illustration No. 3923/5, fig. 3, shows separate parts of the Calorimeter. Illustration No. 3923/5, fig. 1, shows the cartridge in which the coal is placed. **Price, complete** ..... \$ 105 00

REMEMBER OUR DISCOUNT.

3923/5  
Fig. 23923/5  
Fig. 1

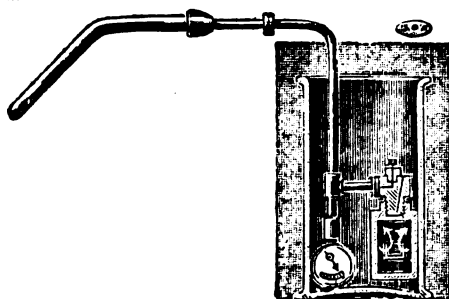
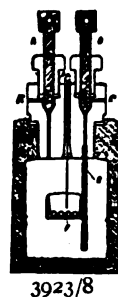
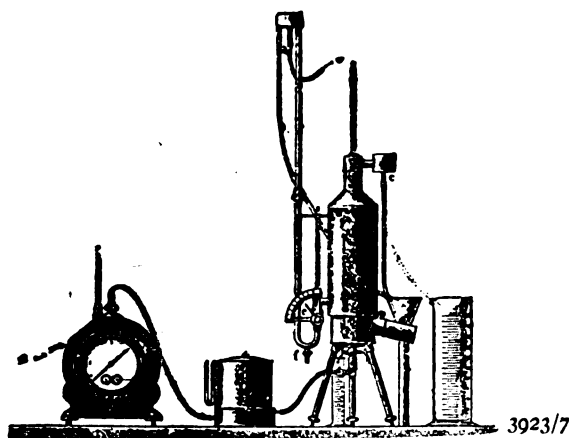
3923/5—Fig. 3

**EXTRAS.**

The following items are not included in the price. They may be ordered as extras at the prices attached:

Water Motor and Support.....	8 30
Bunsen Burner with Rubber Tubing .....	1 25
Hot Air Oven, Copper, 15x20 cm.....	8 30
Thermometer for Oven.....	2 30
Chemical, per can.....	83
Special Chemical, per bottle.....	83
Mortar and Pestle.....	1 25
Watch Glasses, ground edges, per pair, including clip .....	80
<b>Extra Thermometer, graduated to <math>\frac{1}{10}^{\circ}</math> F.....</b>	<b>13 25</b>

- \*I 3923/6—**Calorimeter, according to Hempel**, described in "Gas Analytische Methoden," second edition, 1900. With latest improvements and stirring arrangement, but not with press.....\$ 198 00
- \*I 3923/7—**Calorimeter, according to Junkers**, for the determination of the caloric value of gases. (R. Bueb, Schilling's Journ. f. Gasbeleuchtg. u. Wasserversorg. 1895)
1. Calorimeter with Burner, including 2 thermometers 0 to 50° in 1° 10', 2 Loupes, 5 meters metallic tubing, 2 rubber stoppers and elegant case.....\$306 00
  2. Gasometer, 3 liters capacity, 1 each cylindrical measure 2000 cc. and 100 cc. capacity, two thermometers 0 to 60° in 1° and elegant case.....99 00
  3. Gas-Pressure-Regulator, six lead weights, 1 extra valve and elegant case.....41 00
  4. A Scale and Kerosene Burner in case.....93 00
- Total..... 539 00

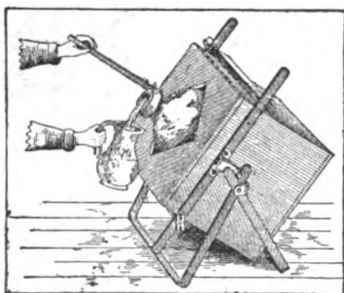


**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*I 3923/8—**Calorimeter, according to Berthelot-Mahler**, improved by Dr. Krocker, with arrangement for the quantitative determination of the adherent water and also of the water generated during the combustion. The apparatus consists of a stirring apparatus for hand and power, nickel-plated brass vessel, holder for thermometer and wooden protecting mantle; bomb, 300 capacity, enameled inside, polished and nickel-plated outside; thermometer, divided in 80°; manometer with support and connections for the bombs; press for making coal bodies; base, dishes and clay capsule for the bomb.....360 00
- 3923/9—Ditto. ditto, with the following modifications: Instead of the wooden protecting mantle, a copper water-mantle will be furnished, the thermometer divided in 180° with reading arrangement for the scale, instead of clay capsule, a platinum crucible with holder and platinum clamp will be supplied. The valve-screw-points made of Platinum-Iridium; the inner cover has a layer of platinum.....700 00
- 3925—**Cans**, ordinary round Tin Cans with covers, for solids.
- | Capacity, | 1      | 2   | 3    | 5    | 10   | 13   | 20   | 25    | 50                |
|-----------|--------|-----|------|------|------|------|------|-------|-------------------|
| =         | 450    | 900 | 1300 | 2200 | 4500 | 6000 | 9000 | grms. | 11 Kilos 22 Kilos |
| Each,     | \$0 09 | 13  | 15   | 20   | 33   | 40   | 55   | 65    | 1 10              |

- 3926—**Cans**, round Tin Jack Cans, covered with wood, for liquids.  
Capacity,  $\frac{1}{2}$  1 2 3 5 10 gall.  
= Approximately, 2 lit. 4 lit. 8 lit. 11 lit. 19 lit. 38 lit.  
Each, \$0 50 55 70 85 \$1 25 1 65
- 3927—**Cans**, safety (square Bankers' Cans), for liquids.  
Capacity, 1 2 3 5 10 gall.  
= Approximately, 4 lit. 8 lit. 11 lit. 19 lit. 38 lit.  
Each, \$0 65 85 1 10 1 40 2 20
- 3929—**Candles**, Standard, for photometric tests (6 candles to the lb.), per lb. \$ 3 75
- 3929/1—Ditto, (12 candles to the lb.), per lb. 3 75
- 3930—**Candle Bombs**, See Catalogue of Physical Apparatus.
- 3940—**Caoutchouc**, thin sheets (see Rubber sheet).
- Caps of India Rubber**, for Test Tubes. See No. 9110/1.
- \*3950—**Capsules**, of clay, small, for blow-pipe use; per gross \$3.75; per doz., 35
- \*3955—Ditto, of charcoal, small, for blow-pipe use; per gross \$4 00; per doz., 38
- \*3960—Ditto, Plattner's, of Meissen porcelain, small, shallow, for blow-pipe use; nest of 3 31
- \*3965—Ditto, Plattner's, of Meissen porcelain, for blow-pipe use, deep form; diameter 45 mm. and 60 mm.; nest of 2 36 1/2
- \*3970—Ditto, **Mixing**, for blow-pipe use, of brass, gilt 55
- \*3971—Ditto, ditto, nickel-plated 30
- \*3972—Ditto, ditto, of horn 18
- 3979—**Carbon Filter Tubes**. See No. 9615.

REMEMBER OUR DISCOUNT.



4002



4005/1 &amp; 2



4006



3960



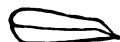
3950 &amp; 3955



3965



4005

3970  
3971  
3972

- 3980—**Carbons**, for galvanic batteries, of the best make, of any dimension, furnished to order at lowest prices (see No. 7655).
- 3995—**Carbon Test** (colorometric) Apparatus, such as: **Racks, Supports, Trays, etc., MADE TO ORDER AT THE LOWEST PRICES.**
- 4000—**Carboys**, glass balloon, in wooden box. Capacity, 38 lit. 2 50
- 4001—**Carboys**, glass balloon, in wooden box. Capacity, 38 lit. With glass stopper ground in 3 35
- \*4002—**Carboy Stand**. An iron stand for carrying and tilting Carboys. Contents can be poured out with ease, speed and safety 6 00
- \*4005—**Casseroles**, iron, enameled (granite ware), with lip and handle.  
Approximate Capacity, 500 cc. 700 cc. 1000 cc. 1.4 lit. 1.9 lit. 3.75 lit.  
Without cover, each, \$0 33 37 41 45 53 80  
With tinned cover each, 43 47 51 60 73 1 00
- \*4005/1—**Casseroles**, with Water-Bath, iron, enameled (granite ware), with enamel cover.  
Approximate Capacity, 1 lit. 2 lit. 4.25 lit. 8 lit.  
Each, \$1 40 2 10 3 25 4 65
- \*4005/2—Ditto, ditto, with tin cover.  
Approximate Capacity, 1 lit. 2 lit. 3.25 lit. 4.25 lit. 8 lit.  
Each, \$1.20 1 90 2 50 2 75 4 10
- \*4006—**Casseroles**, of heavy tinned iron.  
Approximate Capacity, 114x57 127x57 140x70 165x76 184x82 216x95 229x102 mm.  
Per doz., \$2 30 2 50 3 35 4 40 5 20 6 85 7 90

**\*4010- Casseroles, of Berlin porcelain, with lip and flattened handle, glazed inside and outside, with flat bottom.**

	No.	0000	000	00	0	1	2	3	4
Diameter	5	7.5	8.5	9	10.5	11.5	13.5	16.5cm.	
Approximate Capacity	40cc	120cc	150cc	200cc	350cc	450cc	800cc	1350cc	
	\$0 44	0 47½	0 50	0 55	0 63	0 80	1 20	1 75	

**\*4010/1- CASSEROLES, BERLIN PORCELAIN, ROYAL BERLIN SHAPE, with flat bottom, lip and round porcelain handle, glazed inside and outside. WE GUARANTEE them to be of at least as good a quality as the Royal Berlin.**

	No.	1	2	3	3a
Diameter		5	7	8.5	9.5cm.
Approximate Capacity		30	80	150	225cc
Each,		\$0 35	0 40	0 50	0 70

**\*4010/2- Casseroles, Royal Berlin porcelain, with flat bottom, lip and round handle from No. 1 to No. 3a, and with flat handle from No. 4 to No. 7, glazed inside and outside.**

	No.	1	2	3	3a	4	5	6	7
Diameter		5	7	8.5	9.5	11	13.5	16.5	17.5cm.
Approximate Capacity		30	75	150	210	375	750	1250	2000cc
Each,		\$0 44	50	63	88	1 13	1 75	2 19	3 75

**\*4011- Casseroles, of Berlin porcelain, deep form, with lip and handle.**

Approximate Capacity		1 lit.	1½ lit.	3 lit.
		\$2 50	3 00	4 00



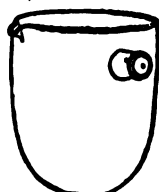
4010



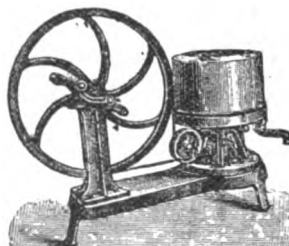
4010/1 &amp; 2



4015



4011



4016/66

**\*4015- Ditto, of Berlin porcelain, with lip, wooden handle and cover, glazed inside and outside, except the bottom.**

	No.	00	0	1	2	3	4	5	6
Diameter		9	10	11	13	14	16	18	21cm
Approximate Capacity		175cc	250cc	400cc	575cc	800cc	1300cc	1650cc	2800cc
		\$0 65	0 80	1 00	1 25	1 90	2 40	3 65	5 00

**\*4015/4, 5 & 6- Cathetometers. See Catalogue of Physical Apparatus.****\*I 4016/66- Centrifuge, for hand power. The inside cylinder is made of tinned copper, the outside cylinder of sheet iron.**

Diameter of inside cylinder		30	36	50 cm.
		\$113 00	168 00	306 00

I 4016/67- Ditto, ditto, diameter of inside cylinder 15 cm. \$ 60 00

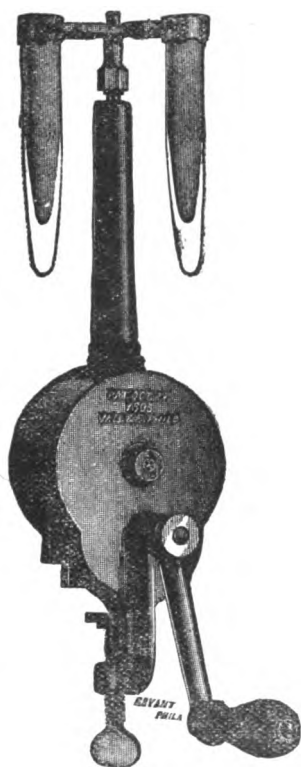
I 4016/68- Ditto, for power. Diameter of inside cylinder 50 cm. 350 00

I 4016/69- Ditto, for the determination of phosphorus, according to Goetz (see Stahl and Eisen 1889, No. 12) 370 00

**\*4016/70- Centrifuge, Medical, New High Speed, patented Oct. 29th 1895, Nov. 24th, and Dec. 1st 1896. For the examination of Urine, Sputum, Blood, Pus and Milk. (Illustr. p. 188.)**

No. 10. High Speed Centrifuge for the Sedimentation of Urine		16 65
No. 11. High Speed Centrifuge for the Sedimentation of Urine and the examination of Blood		25 00
Milk Tubes, each		1 25
Graduated Urine Percentage Tube, each		83
Plain Urine Sediment Tube, each		42
Aluminium Shields, each		83

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



4016/70

4016/71  
No. 144016/71  
No. 15

4016/71

REMEMBER OUR DISCOUNT.

**\*4016/71—Centrifuge, Purdy's Electric, for the examination of Urine, Sputum, Blood, Pus and Milk.**

No. 3. Purdy Electric Centrifuge for examination of urine, with double urine arm carrying two tubes, two plain glass sediment tubes and two graduated percentage tubes .....	\$ 53 30
No. 4. Purdy Electric Centrifuge, same as No. 3, with addition of Hematocrit arm for examination of blood and sputum .....	61 65
No. 5. Purdy Electric Centrifuge, same as No. 3, with addition of Precipitating arm for manipulation of Micro-organisms .....	61 65
No. 6. Purdy Electric Centrifuge, same as No. 3, with both Hematocrit and Precipitating arm .....	70 00
No. 7. Special arm for carrying four urine tubes will be supplied with the Purdy Electric Centrifuge for, extra .....	4 15
No. 8. Special arm for four tubes for Purdy Centrifuge where ordered separately .....	6 65
No. 9. Hematocrit for examination of blood and sputum, with tubes .....	10 00
No. 10. Purdy New Precipitating Arm, for the concentration of bacteria, with two tubes .....	8 35
No. 11. Percentage tubes for blood analysis, each .....	75
No. 12. Small Sputum Tubes for Hematocrit, each, 50c; per doz .....	5 00
No. 13. Precipitating tube, with plug and 6 washers, each .....	50
*No. 14. Urine percentage tubes, each .....	75
*No. 15. Plain sediment tubes, same as No. 14, but without graduation, each, 40c; per doz .....	4 00
No. 16. Graduated milk bottles, for accurate measurement of fat in breast and cows' milk, each, \$1 00; per doz .....	11 25
No. 17. Pipettes for filling milk bottles, large or small, each .....	15
No. 18. Two solutions for milk examination .....	83
No. 19. Aluminium Shields, each .....	1 25
No. 20. Concealed spear-pointed lancet, each .....	1 65
No. 21. Constricted dropper, each .....	30
No. 22. Speed gauge .....	3 33

For other Centrifuges, see Milk Testers No. 7078/1, etc.

\*I 4016/72—Centrifuge, Heyneman's, with water motor, with four holders for test-tubes. A cheap and useful apparatus, where water pressure is available. .... \$ 27 00

\*I 4016/73—Centrifuge, according to Gaertner-Hugershoff.

for 8 24 tests.

Each, \$86 00 144 00

I 4016/74—Centrifuge, according to Gaertner ..... 30 00

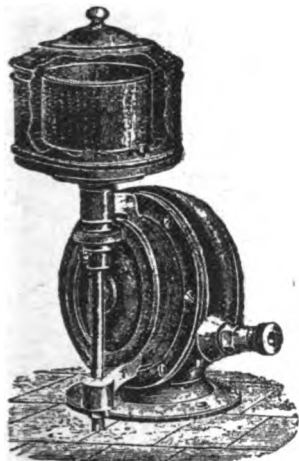
\*I 4016/75—Centrifuge, combined with turbine, for steam or water pressure, convenient for manufacturing laboratories.

Diameter of perforated vessel 20 30 37.5 cm.

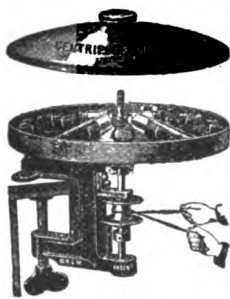
Height of perforated vessel 12 17 20 cm.

Number of revolutions per minute 4000 3000 2500

Each, \$100 00 116 50 166 50



4016/75



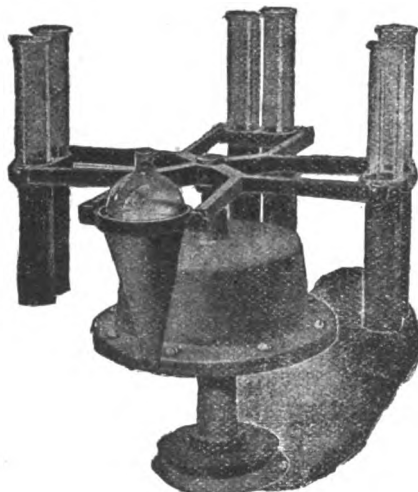
4016/73



4016/72



4016/76



4016/78

**APPROXIMATE EQUIVALENTS:**  
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*4016/76—Centrifuge, for hand power, **FOR THE RAPID ESTIMATION OF PHOSPHORUS BY THE GOETZ METHOD;** for 2 Goetz Tubes ..... 20 00

with 2 Goetz Tubes ..... 21 00

4016/77—Ditto, ditto, for 4 Goetz Tubes ..... 25 00

with 4 Goetz Tubes ..... 28 75

\*4016/78—Centrifuge, for power, to be worked by a small belt, **FOR THE RAPID DETERMINATION OF PHOSPHORUS BY THE GOETZ METHOD.**

for 1 Goetz Tubes for 2 Goetz Tubes for 3 Goetz Tubes for 4 Goetz Tubes.  
and 6 Test-tubes, 20cm. and 4 Test-tubes, 20cm. and 2 Test-tubes, 20cm.

\$33 30

35 00

36 65

38 30

With Tubes 34 65

37 15

39 60

42 05

**4016/79—CENTRIFUGE, FOR ELECTRIC POWER, FOR THE RAPID ESTIMATION OF PHOSPHORUS BY THE GOETZ METHOD.** The centrifuge is furnished with a rheostat for regulating the speed and can be furnished either for 110 volt Edison current or the 55 volt alternating current; Complete with 2 Goetz Tubes.....

\$ 75 00  
85 00

With rheostat for regulating the speed for 200 or 220 volt current.  
**\*4016/80—Centrifuge. Patented Water Motor Centrifuge,** for the rapid and convenient sedimentation of solids in urine and other fluids. Perfect mechanical construction. Absolutely noiseless. Contact parts cannot rust. Needs no attention. May be left running constantly. It may be attached to any ordinary faucet in a moment. The speed is under absolute control. Aluminium shields, 120 cm. pressure tubing and patent hose connection included with each apparatus.

With single arm, one each plain and graduated 15cc tube..... 20 80

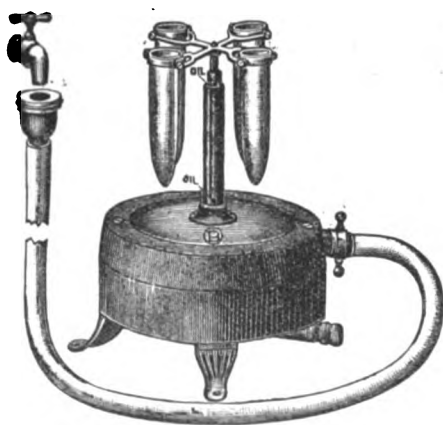
With single arm, one each plain and graduated 50cc tube..... 25 00

**\*4016/81—Ditto.** Same as No. 4016/80, but with double arm.

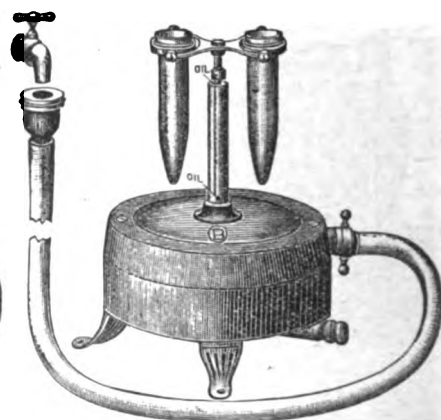
With double arm, two plain and two graduated 15cc tubes..... 24 25

With double arm, two plain and two graduated 50cc tubes..... 30 50

REMEMBER OUR DISCOUNT.



4016/81



4016/80

**4020—Chamois Skins, best quality, imported.**

	P.	N.	M.	EL.	EK	FX	EJ	EG	EE.
Approximate size	23x23	30x30	33x33	35x35	38x38	40x40	45x45	58x58	66x66cm.
Each	\$0 12	0 21	0 26	0 40	0 52	0 56	0 76	1 20	1 55
Per doz	1 15	2 10	2 60	3 95	5 20	5 60	7 55	11 85	15 15
Per kip of 30	2 55	4 60	5 75	8 75	11 50	12 45	16 75	26 25	32 25

**4030—Charcoal, of hard wood, cut in oblong pieces, for blow-pipe use, best quality, 110x25x16mm; per doz., 60cts; per gross.....**

6 00

**\*4040—Charcoal Saw (Illustr. p. 191)**

37

**\*4050—Charcoal Squares, with covers, for charcoal holder (Illustr. p. 191); each, 20c, per doz.....**

2 15

**4051—Ditto, without cover; each, 14cts.; per doz.....**

1 50

**4052—Charcoal Covers only; each, 7cts.; per doz.....**

75

**4060—Charcoal Sticks, for cracking glass; each, 12cts.; per doz.....**

1 00

**I 4073—Charts; Technological Wall-Charts, colored, for Universities and Colleges, mounted on linen. Size 170x125cm.**

I. Bessemer Steel Manufacture, by A. v. Kessely.

II. Glover Tower, Manufacture of Sulphuric Acid, by A. Schaffner.

III. Ammonia Ice Machine, by F. Carré.

IV. Beer Brewing, by G. Noback.

V. Condensation of Hydrochloric Acid, by A. Schaffner.

VI. Sugar Refining.

VII. Diffusion Apparatus, by J. R. Seelowitz.

VIII. Martin Steel Manufacture with Regenerator of Siemens.

IX. Iron Furnace for coke, latest construction

X. Puddling Furnace (Charts VIII, IX & X by J. Schmiedhausen).

XI. Distillation of Sulphur, by Prof. Pasqualini.

XII. Manufacture of Tiles; Hoffmann's Ring-Oven.

**Each**

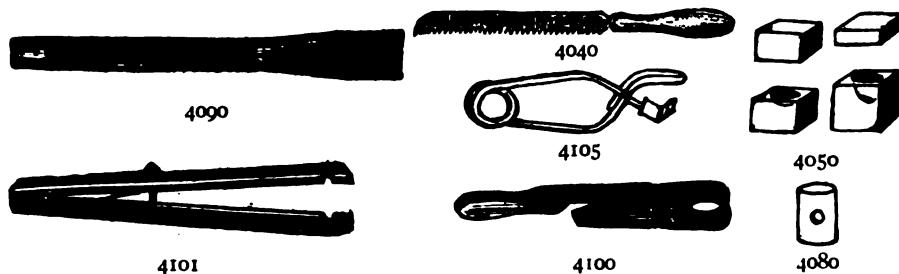
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**I 4073/1—Charts; Technological Wall-Charts, mounted on linen,**  
for teaching chemistry and chemical technology, by Dr. G. v.  
Schroeder and Prof. J. v. Schroeder. Size 108x72 cm.

- 1st Issue** No. 1. Manufacture of Sulphur.  
2. Refining of Sulphur.  
3. Manufacture of Nitric Acid.  
4. Production of Sulphurous Acid by combustion of Pyrites for the manufacture of Sulphuric Acid. (Furnace for lump Pyrites.)
- 2nd Issue** No. 5. Same as No. 4 (Furnace for crushed Pyrites).  
6. Manufacture of Sulphuric Acid (Ground Plan).  
7. Manufacture of Sulphuric Acid (Transverse Section).  
8. Details of Manufacture of Sulphuric Acid.  
9. Concentration of Sulphuric Acid.
- 3rd Issue** No. 10. Manufacture of fuming Sulphuric Acid.  
11. Salzgarten.  
12. Gradirwerk.  
13. Salt Works, Boiling Pans.  
14. Manufacture of Soda.
- 4th Issue** No. 15. Condensation of Hydrochloric Acid.  
16. Charring of Wood.  
17. Coke Oven.  
18. Generator and Regenerative Firing.  
19. Hofmann's Ring Oven.  
20. Lime Oven.
- 5th Issue** No. 21. Manufacture of Phosphorus.  
22. Manufacture of Boracic Acid.  
23. Manufacture of Iodine.  
24. Manufacture of Potassium.  
25. Manufacture of Sodium.
- 6th Issue** No. 26 to 30. Manufacture of Illuminating Gas.
- 7th Issue** No. 31 to 35. Manufacture of Glass and Porcelain.
- 8th Issue** No. 36 to 40. Manufacture of Iron.
- 9th Issue** No. 41 to 45. Manufacture of Copper, Zinc, Lead and Silver.
- 10th Issue** No. 46 to 50. Technology of Fermentation and Manufacture of Sugar.

Price of each Issue of five Wall-Charts ..... \$ 18 00  
Price of each Chart ..... 4 00



**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=50 grm.

**I 4073/2—Charts; according to Prof. C. Bopp, specially designed for**  
teaching chemistry.

	unmounted.	mounted.
Each	\$8 50	16 50

**I 4073/3—Charts; illustrating the system of coal tar derivatives,**  
66x85 cm.; mounted on linen. Each ..... 15 00

**I 4073/4—Charts; of the Periodic System of Elements, according to**  
Mendelejeff, 116x85 cm.; mounted on linen; each ..... 2 75

**ANY OTHER TECHNOLOGICAL CHARTS IMPORTED TO ORDER.**

**\*4080—Chimney, of iron, clay lined, for polariscope lamp..... 2 50**

**Chimney of Iron, to set on Bunsen's Burner. See No. 3900.**

**Chimney of Clay, Erdman's. See No. 4730.**

**\*4090—Chisels, (Cold Chisels), of best steel.**

Width of cut	$\frac{1}{4}$ in.	$\frac{1}{2}$ in.	$\frac{3}{4}$ in.	1 in.	$\frac{1}{2}$ in.	1 in.
	=9.5mm.	12.7mm.	16mm.	19mm.	22mm.	25mm.

Each	\$0 30	35	40	45	65	75
------	--------	----	----	----	----	----

**\*4100—Clamp, of wood, for test tubes; each 12½c; per doz. \$1 45, per gross 17 00**

**\*4101—Ditto, of wood, for holding larger tubes or flasks, with spring ..... 50**

**\*4105—Ditto, of brass, for test tubes, Bunsen's ..... 35**

4106—Clamps, Chaddock's, for test tubes and for necks of flasks, 12 to 38 mm. diameter, No. 2 T.; each.....	\$ 0 40
*4107—Clamps, Stoddard's for test tubes, of brass spring wire; each 19 cts.; doz.....	2 10
*4110—Clamps, for test tubes, metal, with wooden handle.....	50
*4115—Ditto, for Burettes, of iron, with check-nut to adjust position, to attach to an iron support; of latest and most improved pattern.....	60
*4116—Ditto, ditto, of polished brass.....	88
*4117—Ditto, ditto, nickel-plated.....	1 06
*4120—Ditto, ditto, of iron, extension, complete, with clamp fastener without clamp fastener.....	90 70

REMEMBER OUR DISCOUNT.



4107



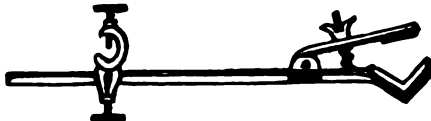
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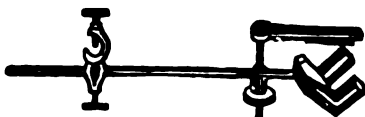
4124



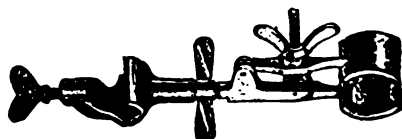
4123



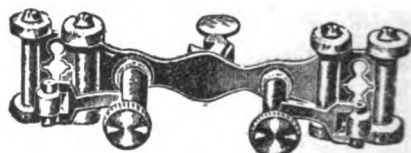
4130



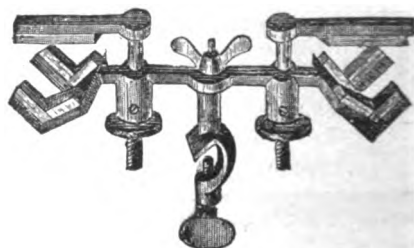
4125



4115-4116-4117



4121



4126



4131

- \*I 4121—Clamps, for burettes, patented. Illustration shows clamp for 2 burettes For 1 2 burettes. \$2 50 3 75
- \*I 4123—Clamps, for burettes, Lunge's, double, for supporting gas volumeters and other parallel tubes; each 2 50
- \*I 4124—Clamps, universal, Ostwald's, for tubes, etc., from 3 mm. to 25 mm. diameter. Iron Brass Without clamp fastener \$2 10 3 15 With iron clamp fastener 2 35 3 40
- \*4125—Clamp, of iron, Hoffman's style, complete, with clamp fastener, \$1 00; without clamp fastener 80
- \*4126—Ditto, ditto, ditto, ditto, double 1 15
- \*4130—Ditto, of iron, Bunsen's style, large, complete, with clamp fastener, \$1 10; without clamp fastener 90
- \*4131—Ditto, ditto, ditto, extra large, for condensers, complete with clamp fastener, \$1 50; without clamp fastener 1 25

- \*4132—Clamp, universal, double jointed, for retorts and condensers, the jaws adapting themselves to irregular-shaped objects. Complete with clamp fastener, \$1 75; without clamp fastener \$ 1 50  
 \*4132/1—Ditto, ditto, but smaller. Complete with clamp fastener 1 45  
 Without clamp fastener 1 20

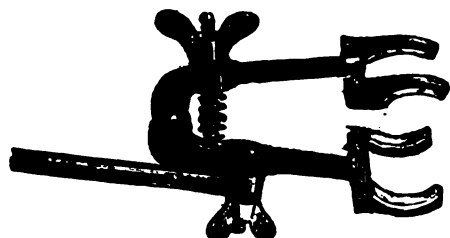
- \*4135—Clamp Fastener, for fastening clamps to rods of supports;  
 small large  
 \$0 25 30

- \*4136—Ditto, ditto, universal double joint 55

- \*4141—Ditto, Spring, for burettes, Mohr's, brass, nickel-plated;  
 small medium large extra large  
 \$0 14 18 25 31

- \*4142—Ditto, ditto, Mohr's with set screw 37

- \*4143—Ditto, ditto, Mohr's, patented, with arrangement to keep the jaws apart until released. No. 1 2 3 4  
 Length 50 60 65 80 mm.  
 Each, \$0 37 44 50 60

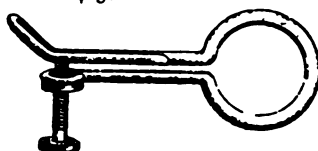


4132 &amp; 4132/1

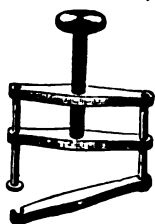


4136

4135



4142



4155



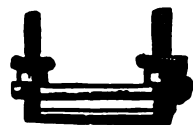
4150



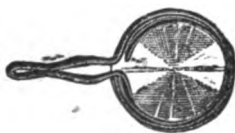
4143



4141



4156



4161



4160

- \*4150—Clamp, Screw, Hoffman's, nickel-plated;  
 small medium large  
 13 x 19 mm. 13 x 25 mm. 38 x 57 mm.  
 \$0 25 31 75

- \*4155—Ditto, ditto, latest improved form, which can be applied to any piece of apparatus without disturbing the tubing. Size 13 x 19 mm., \$0 30; 13 x 25 mm. 37  
 62

- \*4156—Clamp, Screw, Bunsen's, with two screws, each

- \*4160—Ditto, for watch glasses, sheet brass;  
 For watch glasses 5 6 8 10 cm. diameter  
 Each, \$0 16 18 20 22

- \*4161—Ditto, for watch glasses, of spring wire, Bunsen's;  
 For 50 mm. 63 mm. watch glasses.  
 Each, \$0 25 30

- 4162—Clamps, Chaddock's, for beakers;

No. 1B, for beakers No. 0 to 2,

No. 3B, for beakers No. 2 to 4; each 35

- 4162/1—Clamps, Chaddock's, for evaporating dishes;

No. 3D, for dishes 7.5 to 10 cm. diameter,

No. 5D, for dishes 10 to 13 cm. diameter; each 35

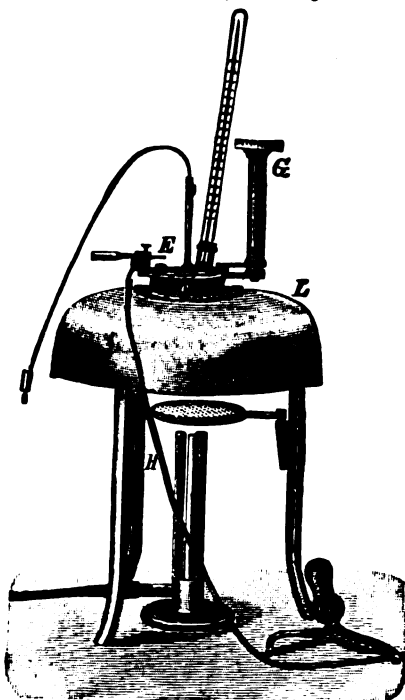
No. 7D, for dishes 15 to 18 cm. diameter; each 40

- 4165—Clamps, of Iron, for fastening apparatus to a table. See Catalogue of Physical Apparatus.

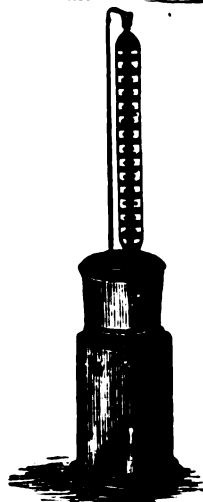
APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

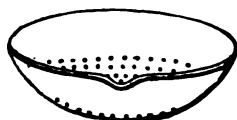
- \*4170—Coal Oil Fire Testers, copper, with thermometer, complete. An instrument to ascertain at what temperature the oil will flash and burn. **Very accurate** ..... \$ 6 50
- \*I 4171—Coal Oil Tester, according to Abel. This instrument has been adopted by the German government. Complete with thermometer ..... 100 00
- \*I 4173—Coal Oil Tester, according to Pensky-Martens. Complete with thermometer, 80 to 250° Celsius, in wooden case ..... 93 75



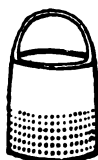
4173



4170



4180



4186



4185



4171

\*4180—Colanders, hemispherical. with lip, of Berlin porcelain;

No. 1	2	3	4	5	6	7
Diameter, 16.5 cm.	14.5 cm.	13.25 cm.	12 cm.	10 cm.	8.5 cm.	6 cm.
\$0 95	85	70	60	55	45	35

\*4185—Ditto, with straight sides, without lip;

No. 1	2	3	4	5
Diameter, 30 cm.	28 cm.	23 cm.	19 cm.	14 cm.
\$3 35	2 65	2 30	1 25	95

\*I 4186—Ditto, of Berlin porcelain, with handle, 16 cm. high.....

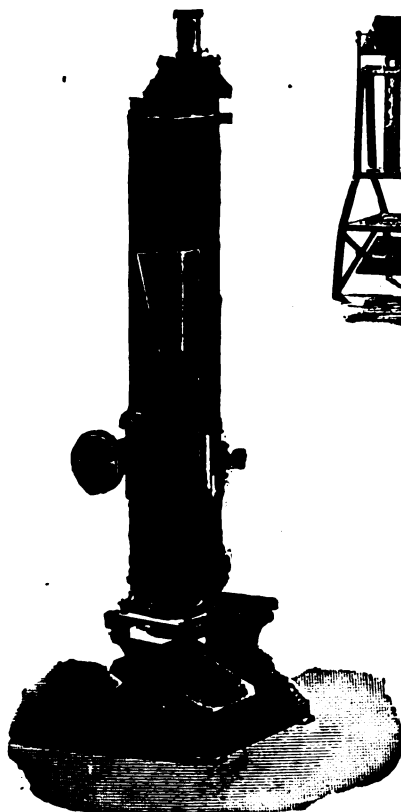
4190—Collection of 52 Alkaloids, in vials, in elegant case.....	\$ 45 00
4200—Ditto, of 72 Alkaloids and Glucosides, in elegant case .....	60 00
I 4210/1—Ditto, of 64 preparations, consisting of 48 metals, etc., in elegant case.....	45 00
I 4210/2—Ditto, of 63 elements, in sealed tubes, in elegant case.....	187 50
I 4210/3—Ditto, ditto, including Germanium .....	206 25
I 4210/4—Ditto, ditto, same as No. 4210/2, but smaller specimens .....	78 75
I 4211—Collection of 15 Metals, in small sticks .....	42 00
4220—Ditto, of 100 minerals, arranged according to Dana's Manual of Mineralogy .....	20 00
4221—Ditto, ditto, ditto, in black wa'nut case .....	26 00
4230—Ditto, of 100 minerals, larger .....	37 50
4231—Ditto, ditto, ditto, in black walnut case .....	45 00
I 4232—Ditto, of 50 Minerals, according to G. Tschermak.	
Average size                   3 x 4                   5 x 6                   7 x 9 cm.	
Without case,                   \$ 8 50                   12 25                   17 50	
In lacquered wooden case,   10 25                   14 75                   21 00	
In finely polished wooden case, 11 75                   17 50                   25 25	
I 4232/1—Ditto, of 100 Minerals, according to G. Tschermak.	
Average size                   3 x 4                   5 x 6                   7 x 9 cm.	
Without case,                   \$ 15 50                   24 50                   35 00	
In lacquered wooden case,   18 25                   28 00                   42 00	
In finely polished wooden case, 21 00                   35 00                   52 50	
I 4232/2—Ditto, of 150 Minerals, according to G. Tschermak.	
Average size                   3 x 4                   5 x 6                   7 x 9 cm.	
Without case,                   \$ 26 75                   42 00                   63 00	
In lacquered wooden case,   32 00                   47 75                   73 50	
In polished wooden case,   35 00                   57 50                   87 50	
I 4232/3—Ditto, of 70 Minerals, according to Prof. Dr. R. Brauns, average size 5 x 6 cm.	
Without case   In lacquered wooden case	
Per set, \$ 21 00   24 50	
I 4232/4—Ditto, of 95 Minerals, according to Prof. Dr. R. Brauns, average size 5 x 6 cm.	
Without case   In lacquered wooden case	
Per set, \$ 77 00   80 50	
I 4232/5—Ditto, of 47 Minerals, according to Prof. Dr. R. Brauns, average size 5 x 6 cm.	
Without case   In lacquered wooden case	
Per set, \$ 56 00   58 25	
I 4232/6—Ditto, of 35 Minerals, according to Prof. Dr. R. Brauns, average size 5 x 6 cm.	
Without case   In lacquered wooden case	
Per set, \$ 35 00   36 75	
I 4232/7—Ditto, of 200 Minerals, arranged by Dr. F. Krantz.	
Average size                   5 x 6                   7 x 9 cm.	
First selection,               \$ 140 00                   210 00	
Second selection,           87 50                   140 00	
Third selection,           56 00                   87 50	
I 4232/8—Ditto, of 300 Minerals, arranged by Dr. F. Krantz.	
Average size                   5 x 6                   7 x 9 cm.	
First selection,               \$ 245 00                   350 00	
Second selection,           175 00                   280 00	
Third selection,           105 00                   210 00	
I 4232/9—Ditto, of 500 Minerals, arranged by Dr. F. Krantz.	
Average size                   5 x 6                   7 x 9 cm.	
First selection,               \$ 560 00                   1050 00	
Second selection,           350 00                   700 00	
Third selection,           210 00                   420 00	
I 4232/10—Ditto, of 1000 Minerals, arranged by Dr. F. Krantz.	
Average size                   5 x 6                   7 x 9 cm.	
First selection,               \$ 1400 00                   2800 00	
Second selection,           840 00                   1750 00	
Third selection,           525 00                   1050 00	

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

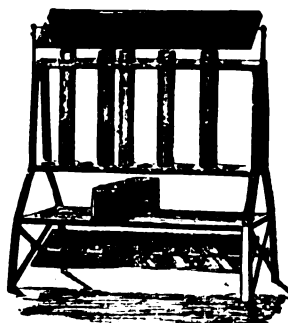
I 4232/11—Collection of 2000 Minerals, arranged by Dr. F. Krantz.			
	Average size	5 x 6	7 x 9 cm.
	First selection,	\$ 4200 00	8400 00
	Second selection,	2520 00	5250 00
	Third selection,	1680 00	3150 00
I 4233—Ditto, of 480 of the most important natural chemical compounds, according to Prof. P. Groth.			
	Average size, 5 x 6.	Per set,	\$ 371 00
	Average size, 7 x 9.	Per set,	560 00
I 4233/1—Ditto, of 400 Minerals, according to J. D. Dana.			
	Average size 5 x 6.	Per set,	315 00
	Average size 7 x 9.	Per set,	490 00
I 4233/2—Ditto, of Minerals, to illustrate the general physical properties of the minerals.			
	Average size	5 x 6	7 x 9 cm.
	Collection of 100,	\$ 42 00	66 50
	Collection of 200,	112 00	175 00
	Collection of 300,	210 00	315 00
I 4233/3—Ditto, of 100 pseudomorphous minerals.			
	Average size	5 x 6	7 x 9 cm.
	Per set,	\$ 91 00	140 00
I 4233/4—Ditto, of rock-forming minerals, according to F. Zirkel.			
	Average size	5 x 6	7 x 9 cm.
	Collection of 130 minerals,	\$ 70 00	105 00
	Collection of 75 minerals,	31 50	49 00
I 4233/5—Ditto, of metallurgical minerals.			
	Average size	5 x 6	7 x 9 cm.
	Collection of 250 minerals,	\$ 210 00	315 00
	Collection of 150 minerals,	105 00	157 50
I 4234—Ditto, of 125 minerals, according to Prof. Dr. M. Bauer, consisting of uncut Gems and Precious Stones, average size 5 x 6 cm. Per set			
			150 00
I 4234/1—Ditto, of 75 minerals, according to Prof. Dr. M. Bauer, consisting of uncut Gems and Precious Stones, average size 5 x 6 cm. Per set			
			75 00
4238—Collection of Rock Sections, according to Dr. F. Krantz, No. 124; 12 Specimens, in elegant case			
			10 00
4238/1—Ditto, ditto, No. 125; 25 Specimens, in elegant case			
			20 00
4238/2—Ditto, ditto, No. 126; 100 Specimens, including the most important crystalline rock types			
			83 35
4238/3—Ditto, ditto, No. 127; 50 Specimens, in elegant case			
			43 35
4238/4—Ditto, ditto, No. 128; 250 Specimens of massive rocks, in polished wooden case			
			216 65
4238/5—Ditto, ditto, 500 Specimens, in polished wooden case			
			433 30
4238/6—Ditto, ditto, 600 Specimens, in polished wooden case			
			516 65
4238/7—Ditto, ditto, 700 Specimens, in polished wooden case			
			600 05
4238/8—Ditto, ditto, 800 Specimens, in polished wooden case			
			680 00
4238/9—Ditto, ditto, 900 Specimens, in polished wooden case			
			756 65
4238/10—Ditto, ditto, 1000 Specimens, in polished wooden case			
			826 65
4238/11—Ditto, ditto, 120 Specimens, of the most important rock-forming minerals, in polished wooden case			
			120 00
4240, etc.—Ditto, of Minerals. See Catalogue of Physical Apparatus.			
4240/8—Ditto, of Minerals, (Scale of Fusibility). See Catalogue of Physical Apparatus.			
4242/4243—Ditto, of 80 Physiological Preparations (zoological). See Catalogue of Physical Apparatus.			
4244—Ditto, of 16 Fluorescent Solutions. See Catalogue of Physical Apparatus.			
*4250—Color Comparator, Prof. Leed's, for quantitative determination of substances in solution by the relative depth of tint of a certain color (Illustr. p. 197). With Prism			
			18 75
4251—Color Comparator, of wood, with ground glass plate.			
	For	2	4 Carbon Tubes
	Each,	\$5 00	6 75
Color Comparators of any kind made to order at lowest prices.			
*4252—Colorimeter or Chromometer, according to Stead. (See Blair's Analysis of Iron and Steel, p. 177, 3rd edition). (Illustr. p. 197)			
			17 00
*4254—Colorimeter, according to Stokes (Illustr. p. 197)			
			20 00
*4255—Colorimeter, Stammer's, latest improved form (Illustr. p. 197)			
			94 25
If imported duty free			
			68 15

REMEMBER OUR DISCOUNT.

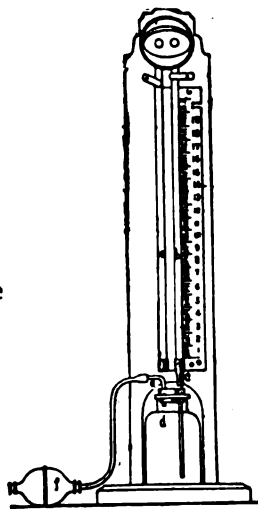
4255/1—**Colorimeter**, according to **Stammer**, modified by **C. Engler**,  
for petroleum. (Dingl. Polyt. Journal, vol. 264, p. 287)..... \$ 151 50  
**If imported duty free** ..... 118 50



4255

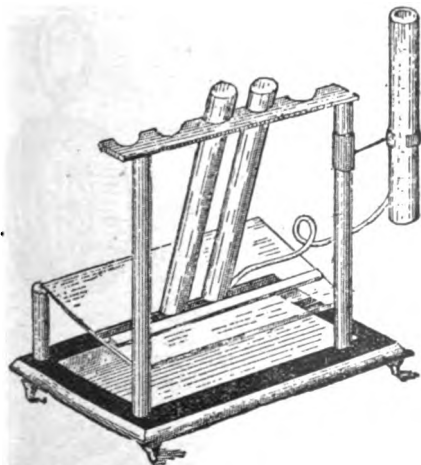


4250

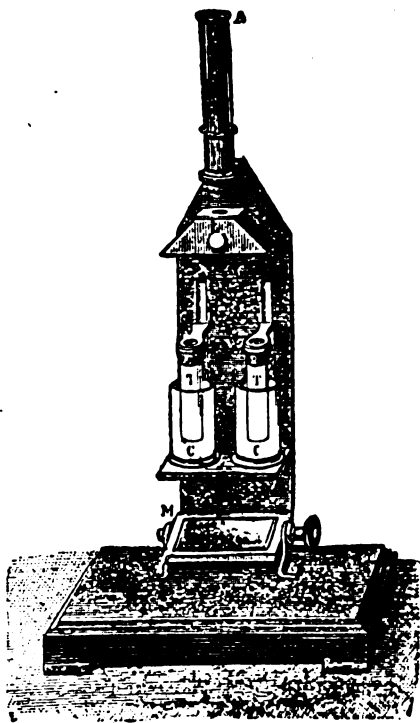


4252

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



4254



4256

\*4256—**Colorimeter**, according to **Duboscq-Soleil**..... 133 00

4256/1—**Colorimeter**, according to **C. H. Wolff**, for determining the value of aniline dyes, cochineal, dye-woods, salicylic acid in absorbent cotton, for the determination of traces of copper, zinc, lead and chlorine compounds, and for determining ammonia and nitrous acid in water, etc.

On iron base ..... \$ 100 00

If imported duty free ..... 73 50

4256/2—Ditto, ditto, in elegant polished wooden case, serving also as support 125 00

If imported duty free ..... 90 00

\*4257—**Colorimeter**, according to **Gallenkamp**, new construction ..... 115 00

If imported duty free ..... 86 50

\*4260—**Combustion Boats**, of Meissen porcelain.

No.	0	1	2
	100 x 18 mm.	75 x 15 mm.	75 x 11 mm.
Each,	\$0 <del>37 1/2</del> 40	<del>31</del> 35	<del>29</del> 30

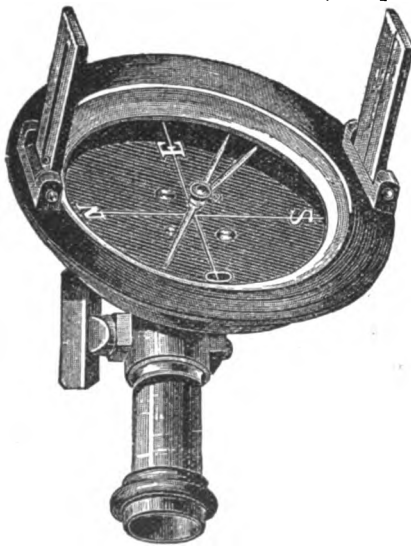
4270—Ditto, of platinum, any size made to order, at lowest market price.

\*4271—Ditto, ditto, with handle, any size made to order, at lowest market price.

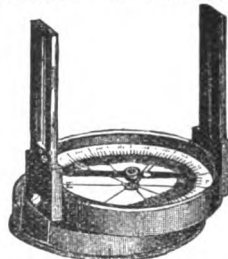
4272—Ditto, ditto, with perforated bottom for filtering, as used in iron analysis; weight about 14 grammes; at lowest market price.

**Combustion Tubes**, of platinum. See No. 9531.

REMEMBER OUR DISCOUNT.



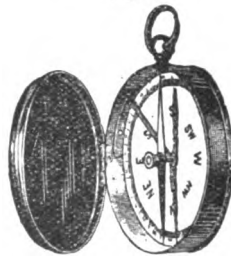
4291/1



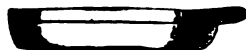
4290



4257



4285



4271



4260



4280



4275

\*4275—**Compass, Magnetic**, brass, open face, with ring, paper dial; 35 mm. diameter. Per dozen, \$4.50. Each ..... 45

\*4280—Ditto, ditto, brass, with ring and stop, open face, diameter 50 mm. Each ..... 1 25

\*4285—Ditto, ditto, brass, hinge cover, with stop, jewel and degrees, diameter 50 mm. Each ..... 2 00

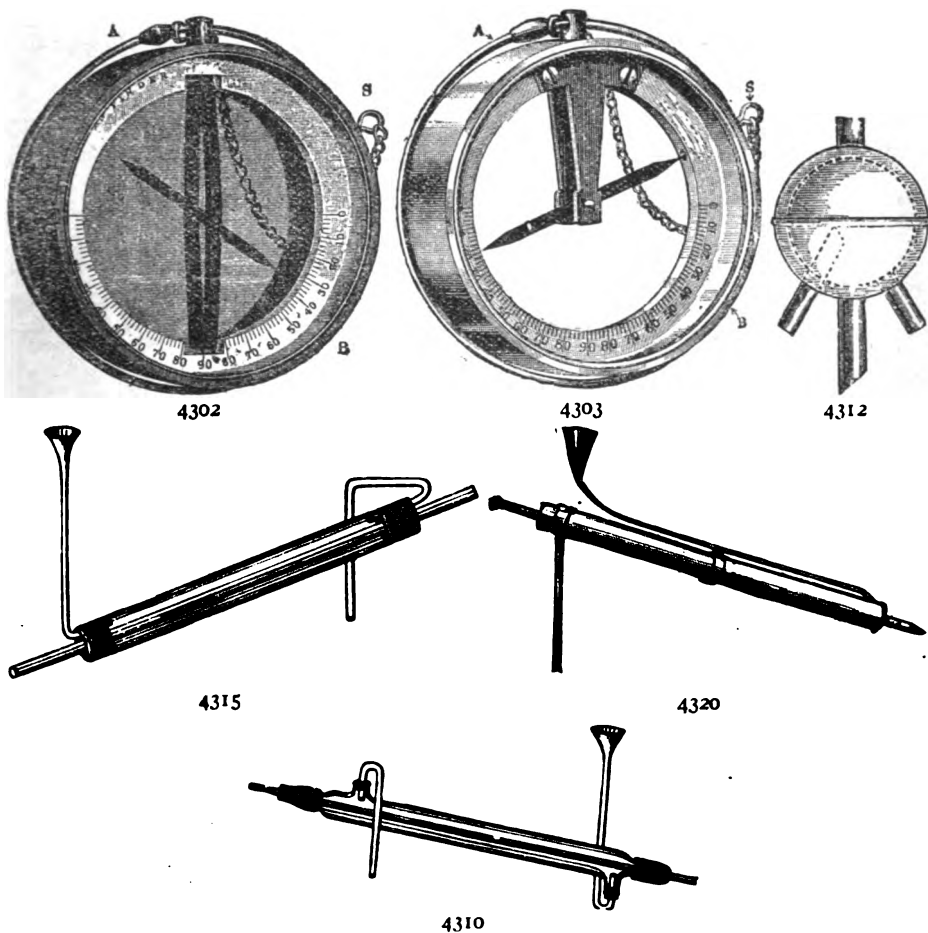
\*4290—Ditto, ditto, Surveyor's with raised sights, nickel-plated case and slip-cover, jeweled center, stop and degrees. Diameter 60 mm. Each ..... 8 00

\*4291/1—Ditto, ditto, Surveyor's, bar needle, folding sights, ball socket, Jacob-staff mounting, in case.

Diameter,	54	66	80	90	105 mm.
Each,	\$12 80	13 60	15 50	19 10	20 00



- \*4302—**Compass, Magnetic, Miners' (Meridian Finder)**, with stop. For tracing magnetic iron ores, etc., etc. The needle has a motion in azimuth as well as in altitude, enabling it to find its own true magnetic meridian; 9 cm. in diameter, in case ..... \$ 30 00
- \*4303—**Compass, Miners'**, for tracing iron ore. This Compass consists of a dipping needle, 63 mm. long, mounted in a brass-ring, graduated  $0^{\circ}$  to  $180^{\circ}$  in each direction, and having plate-glass top and bottom. When used for tracing ore, the prospector should hold the ring in his hand and keep the needle north and south, standing with his face to the west. In case ..... 16 65
- 4304/1, etc.—**Compasses, Magnetic.** See also Catalogue of Physical Apparatus.



- \*4310—**Condenser, Liebig's, made entirely of well annealed glass,** latest and most approved style, only rubber connections.

Length of glass body...	40 cm.	50 cm.	60 cm.	75 cm.	100 cm.
	\$1 35	1 55	2 25	2 50	3 75

- 4311—Ditto, ditto, with support,

No. 8832	\$3 85	4 30	5 25	6 00	7 75
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- \*14312—**Condenser, Soxhlet's, globe shape** (Rueckfluss Kuehler), of brass, tinned inside, nickel-plated outside ..... 3 75

- \*4315—**Condenser, Mohr's, both tubes of glass, with corks.**

	26 cm.	31 cm.	40 cm.	50 cm.
	\$1 10	1 25	1 50	1 60

- \*4320—**Ditto, Liebig's, brass, of superior make, without seams, highly polished and lacquered, including condensing tube, but no stand.**

Each,	30 cm.	38 cm.	50 cm.	75 cm.	100 cm.
	\$3 35	4 00	4 65	6 00	6 65

\*4321—Condenser, Leibig's on elegant metal stand, complete.

50 cm.	75 cm.	100 cm.
\$8 00	10 00	11 65

\*4330 Ditto, a glass worm in glass cylinder, 25x5 cm. 35x6 cm. \$1 75 2 10

4331—Ditto, the glass worm alone, for 25x5 cm.—35x6 cm. cylinders. \$0 09 1 15

\*4332—Ditto, of glass, in one piece, for extraction apparatus, etc.

Length of wide tube,	20 cm.	25 cm.	30 cm.	40 cm.	50 cm.
Each,	\$ .95	1 05	1 35	1 60	1 85

I 4332/1—Ditto, ditto, the inner tube flat, giving more cooling surface.

Length of wide tube,	20 cm.	25 cm.	30 cm.	40 cm.	50 cm.
Each,	\$ .05	1 25	1 55	1 85	2 50

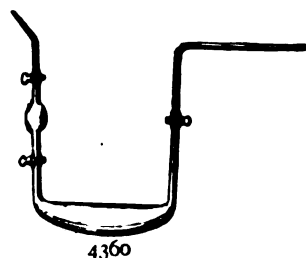
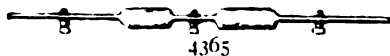
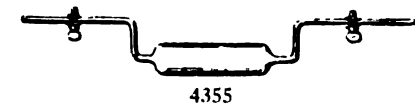
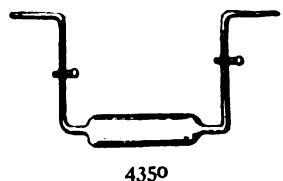
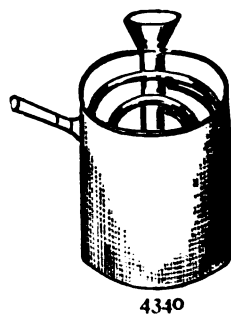
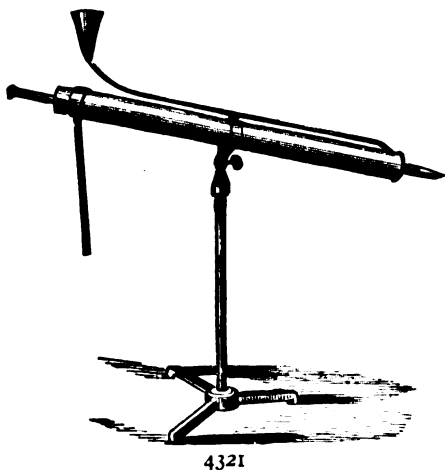
\*4333—Ditto, ditto, according to Allihn.

	25 cm.	30 cm.	40 cm.	60 cm.	75 cm.
Each,	\$1 55	1 70	1 85	3 00	4 00

I 4334—Ditto, ditto, made like No 4332, but instead of a straight tube, they have spiral tubes similar to No 4330, giving the greatest cooling surface.

Length of wide tube,	20 cm.	25 cm.	35 cm.	45 cm.	60 cm.	75 cm.
	\$1 55	1 85	3 25	3 75	5 00	7 50

REMEMBER OUR DISCOUNT.



\*4340—Ditto, of zinc, with heavy block tin worm.

Size to fit,	2 lit.	3 1/4 lit.	7 1/2 lit.	11 1/2 lit.	19 lit.	stills.
	\$3 75	4 90	6 00	7 10	9 00	

\*4350—Ditto, for sulphurous acid, with two Geissler's stop-cocks on the vertical limbs

\$ 3 10

\*4355—Ditto, ditto, with two stop-cocks on the horizontal limbs

3 10

\*4360—Ditto, for sulphurous acid, with three stop-cocks on the vertical limbs, and extra reservoir

4 35

\*4365—Ditto, ditto, two bulbs and three stop-cocks in one line

4 25

4365/1—Ditto, ditto, large size, with three stop-cocks, fitted into a glass jar. See No 2090.

\*4366—Ditto, ditto, with 3 stop-cocks (Illustr. p 201)

9 50

\*4367—**Condenser**, for sulphurous acid, with stop-cock and exit tube ..... \$ 1 55  
 \*4368—Ditto, ditto, without stop-cock ..... 62

\*4370—**Cones, of Platinum**, with fine perforations, for supporting filters, when used with a filtering pump, **flexible; not soldered.**  
 Diameter of metal disc, 29 45 57 70 mm.  
 Approximate weight, 0.6 1.25 2.25 3.25 grammes.

**Charge for making same in addition to the price of platinum. Each,**

\$0 50 75 1 00 1 25

**The Platinum at Lowest Market Price!**

Supposing the list price of Platinum to be \$1.25 per gramme, they would cost including charge for making, each.

\$1 25 2 31 3 81 5 31

\*4371—**Cones, of Platinum, made of one piece, with fine perforations, of exact angle of 60°.**

Diameter.

19 25 31 38 51 mm.

Approximate weight,

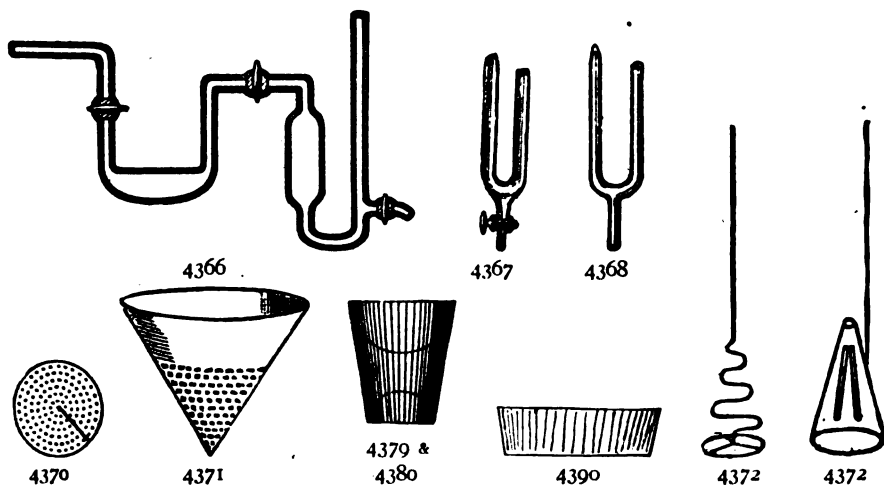
2 25 3.25 5 5 7.5 13 grammes.

**Charge for making same in addition to the price of platinum. Each,**  
**The Platinum at Lowest Market Price!**

Supposing the list price of platinum to be \$1.25 per gramme, they would cost including charge for making, each,

\$1 50 2 00 2 50 3 00 4 50

\$4 31 6 06 9 37 12 37 20 75



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

\*4372—**Cones and Spirals, of platinum**, for electrolytical analysis of copper. Weight from 30 to 60 grammes. **At Lowest Market Price!**

**Platinum Cylinders for same, see No. 4798.**

\*4379—**Corks, extra fine quality, specially selected, XXX, tapering, regular length.** By original package of 5 gross of any size, 15 per cent discount in addition to special discount.

	No. 0	1	2	3	4	5	6	7	8	9	10
Diam. of large end,	9.5	11.1	12.7	14.3	15.9	17.4	19.	20.6	22.2	23.8	25.4 mm.
Per doz.....	\$0 09	0 09	0 09	0 11	0 12	0 15	0 17	0 21	0 26	0 30	0 39
Per gross.....	50	60	60	70	80	1 00	1 10	1 40	1 70	2 00	2 60
	No. 11	12	13	14	15	16	17	18	19	20	
Diam. of large end,	27.	28.6	30.2	31.7	33.3	34.9	36.5	38.	39.7	41.2 mm.	
Per doz.....	\$0 41	0 45	0 50	0 55	0 60	0 78	0 87	0 96	1 05	1 20	
Per gross.....	2 75	3 00	3 30	3 65	4 00	5 20	5 80	6 40	7 00	8 00	

**4379/1—Corks, extra fine quality, specially selected, XXX, tapering, extra long. By original package of 5 gross of any size, 15 per cent discount in addition to special discount.**

	No. 0	1	2	3	4	5	6	7	8	9
Diam. of large end,	9.5	11.1	12.7	14.3	15.9	17.4	19.	20.6	22.2	23.8 mm.
Per doz.....	\$0 11	0 11	0 11	0 14	0 15	0 18	0 21	0 29	0 35	0 38
Per gross.....	70	70	70	90	1 00	1 20	1 40	1 00	2 30	2 50

	No. 10	11	12	13	14	15
Diam. of large end,	25.4	27.	28.6	30.2	31.7	33.3 mm.
Per doz.....	\$0 53	0 56	0 60	0 64	0 68	0 69
Per gross.....	3 50	3 75	4 00	4 25	4 50	4 60

**\*4380—Corks, first quality, XX, regular length. By original package of 5 gross of any size, 15 per cent discount in addition to special discount. (Illustr. p. 201.)**

	No. 0	1	2	3	4	5	6	7	8	9	10
Diam. of large end,	9.5	11.1	12.7	14.3	15.9	17.4	19.	20.6	22.2	23.8	25.4 mm.
Per doz.....	\$0 05	0 05	0 05	0 05	0 05	0 07	0 07	0 09	0 11	0 13	0 16
Per gross.....	25	25	25	30	35	45	53	68	85	1 00	1 28

	No. 11	12	13	14	15	16	17	18	19	20
Diam. of large end,	27.	28.6	30.2	31.7	33.3	34.9	36.5	38.	39.7	41.2 mm
Per doz.....	\$0 17	0 19	0 21	0 23	0 25	0 33	0 37	0 40	0 44	0 50
Per gross.....	1 35	1 48	1 65	1 83	2 00	2 60	2 90	3 20	3 50	4 00

	No. 22	24	26
Diam. of large end,	44.4	47.6	50.8 mm.
Per doz.....	\$0 63	0 80	0 95
Per gross.....	5 00	6 25	7 50

**4381—Corks, first quality, XX, tapering, extra long. By original package of 5 gross of any size, 15 per cent discount in addition to special discount.**

	No. 1	2	3	4	5	6	7	8
Diam. of large end,	11.1	12.7	14.3	15.9	17.4	19.	20.6	22.2 mm.
Per doz.....	\$0 05	0 05	0 06	0 07	0 08	0 10	0 14	0 17
Per gross.....	30	30	38	43	50	63	95	1 13

	No. 9	10	11	12	13	14	15
Diam. of large end,	23.8	25.4	27.	28.6	30.2	31.7	33.3 mm.
Per doz.....	\$0 18	0 26	0 28	0 30	0 32	0 34	0 36
Per gross.....	1 20	1 75	1 88	2 00	2 13	2 25	2 40

**4385—Corks, first quality, XX, short tapering.**

**By original package of 5 gross of any size, 15 per cent discount in addition to special discount.**

	No. 0	1	2	3	4	5	6	7	8	9	10	11
Diam. of large end,	9.5	11.1	12.7	14.3	15.9	17.4	19.	20.6	22.2	23.8	25.4	27. mm.
Per doz.....	\$0 05	0 05	0 05	0 05	0 05	0 05	0 05	0 07	0 09	0 10	0 14	0 16
Per gross.....	25	25	25	25	25	33	38	55	63	70	1 05	1 13

	No. 12	13	14	15	16	17	18	19	20	22	24	26
Diam. of large end,	28.6	30.2	31.7	33.3	34.9	36.5	38.	39.7	41.2	44.4	47.6	50.8
Per doz.....	\$0 17	0 18	0 19	0 21	0 24	0 26	0 29	0 33	0 38	0 47	0 57	0 70
Per gross.....	1 23	1 35	1 50	1 65	1 85	2 05	2 25	2 63	3 00	3 75	4 50	5 50

**4386—Corks, best velvet, straight, for combustion tubes, 35 mm. long, 11 1/2 mm. diameter; per doz.....**

18

**\*4390—Ditto, flat, so-called Specie Corks. By original package of 5 gross of any size, 15 per cent discount in addition to special discount. (Illustr. p. 201.)**

	19.	22.2	25.4	28.6	31.7	34.	38. mm.
Diam. of large end,	19.	22.2	25.4	28.6	31.7	34.	38. mm.
Per doz.....	\$0 05	0 05	0 07	0 10	0 12	0 14	0 17
Per gross.....	27	37	47	67	84	1 00	1 27

	41.3	44.4	47.6	50.8	54.	57.1	60.3 mm.
Diam. of large end,	41.3	44.4	47.6	50.8	54.	57.1	60.3 mm.
Per doz.....	\$0 21	0 25	0 28	0 32	0 36	0 40	0 54
Per gross.....	1 54	1 83	2 20	2 40	2 73	3 07	4 07

	63.5	66.7	69.8	73.	76.2	82.5	88.9 mm.
Diam. of large end,	63.5	66.7	69.8	73.	76.2	82.5	88.9 mm.
Per doz.....	\$0 60	0 68	0 75	0 84	0 93	1 10	1 25
Per gross.....	4 50	5 07	5 67	6 27	7 00	8 33	9 33

	95.2	101.6	114.3	127.	139.7	152.4 mm.
Diam. of large end,	95.2	101.6	114.3	127.	139.7	152.4 mm.
Per doz.....	\$ 1 40	1 85	2 45	3 25	4 00	4 90
Per gross.....	10 67	16 00	21 33	28 00	34 67	42 67

**Corks, X and common grades, furnished at correspondingly lower prices!**

**\*4400—Cork Knife, for cutting Corks, etc.....**

25

REMEMBER OUR DISCOUNT.

4410—Cork Plates, of good quality 10 x 20 cm.

	3 mm.	4.5 mm.	6 mm.	
Each	\$0 12	0 18	0 24	\$ 0 44
*4420—Cork-Presser, of japanned iron				85

\*4421—Ditto, of bronzed iron

\*4425—Ditto, rotary.

\*4430—Cork Puller, by full doz., \$2.00; each

\*4440—Cork Screws, steel, with wooden handle, fine finish.

	med.	extra lge	and strong.
	\$0 35	0 50	
By full doz	3 00	4 50	

\*4445—Cork Screws, steel, folding.

By full doz

\*4450—Cork Tongs, of steel, best German make, single.

	double.
\$1 15	1 35

\*4460—Covers, Convex, of well annealed glass, with ground edges, for beakers, funnels, etc.

(For 25, 38, 44 and 50mm. sizes see No. 9880.)

Diam.	63	76	80	101	114	127	140	152	178	203	229mm.
Each	\$0 08	0 11	0 14	0 16	0 18	0 21	0 24	0 26	0 37	0 47	0 63
Doz	0 90	1 20	1 50	1 85	2 10	2 45	2 75	3 00	4 30	5 50	7 35

\*4465—Ditto, flat, of glass, with ground edges.

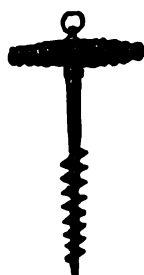
Diameter	7.5cm.	10cm.	13cm.	15.5cm.
Each,	\$0 10	0 12	0 16	0 22

\*4470—Ditto, ditto, with hole at the side for stirring rod.

Diameter	7.5cm.	10cm.	13cm.	15.5cm.
Each,	\$0 30	0 35	0 37	0 45

\*4475—Ditto, ditto, with hole in the center for stirring rod.

Diameter	7.5 cm.	10 cm.	13 cm.	15.5 cm.
Each,	\$0 30	0 35	0 37	0 45



4440



4420



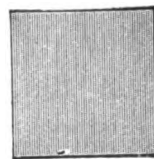
4445



4410



4425



4480 to 4490



4445



4420



4470



4475



4465



4460



4450

\*4480—Covers, for microscopic objects, of thin glass, finest quality, in  $\frac{1}{2}$  oz. boxes (=14.175 grms.); 16, 19 and 22 mm. square; No. 1. Thickness 1-200 to 1-150 inch. ( $\frac{1}{16}$  to  $\frac{1}{8}$  mm.)

Per doz. Per oz. (=28.35 grms.) Per oz. in lots of 25 oz.

24cts. \$1 55 1 40

\*4485—Covers, for microscopic objects, of thin glass, finest quality, in  $\frac{1}{2}$  oz. boxes (=14.175 grms.); 16, 19 and 22 mm. square; No. 2. Thickness 1-150 to 1-100 inch. ( $\frac{1}{16}$  to  $\frac{1}{8}$  mm.)

Per doz. Per oz. (=28.35 grms.) Per oz. in lots of 25 oz.

21cts. \$1 25 1 08

\*4490—Covers, for microscopic objects, of thin glass, finest quality, in  $\frac{1}{2}$  oz. boxes (=14.175 grms.); 16, 19 and 22 mm. square; No. 3. Thickness 1-100 to 1-50 inch. ( $\frac{1}{16}$  to  $\frac{1}{8}$  mm.)

Per doz. Per oz. (=28.35 grms.) Per oz. in lots of 25 oz.

18cts. 94cts. 83cts.

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.;  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grms.; 1 pound=450 grms.

\*4495—Covers, for microscopic objects, of thin glass, finest quality, in  $\frac{1}{2}$  oz. boxes (=14.175 grms.); 16, 19 and 22 mm. diameter, round; No. 1. Thickness 1-200 to 1-150 inch. ( $=\frac{1}{8}$  to  $\frac{1}{4}$  mm.)  
Per doz. Per oz. (=28.35 grms.) Per oz. in lots of 25 oz.  
27cts. \$1 70 1 58

\*4500—Covers, for microscopic objects, of thin glass, finest quality, in  $\frac{1}{2}$  oz. boxes (=14.175 grms.); 16, 19 and 22 mm. diameter, round; No. 2. Thickness 1-150 to 1-100 inch. ( $=\frac{1}{4}$  to  $\frac{1}{2}$  mm.)  
Per doz. Per oz. (=28.35 grms.) Per oz. in lots of 25 oz.  
24cts. \$1 55 1 33

\*4505—Covers, for microscopic objects, of thin glass, finest quality, in  $\frac{1}{2}$  oz. boxes (=14.175 grms.); 16, 19 and 22 mm. diameter, round; No. 3. Thickness 1-100 to 1-50 inch ( $=\frac{1}{4}$  to  $\frac{1}{2}$  mm.)  
Per doz. Per oz. (=28.35 grms.) Per oz. in lots of 25 oz.  
21cts. \$1 25 1 05

\*4520—Crucibles, of black-lead (plumbago, graphite), best make. From No. 12 upwards each Number represents a capacity of about 1.36 Kilo (3 lb.) of molten metal. Covers are charged extra!

	No. 00	0	1	2	3	4	5	6	8	10
Height	60	73	86	102	114	130	146	168	181	200 mm.
Diameter at Bilge	51	57	66	79	92	108	120	136	146	165 mm.
Each	\$0 30	30	40	50	60	70	80	90	1 10	1 30

No. 12 and upwards to No. 300 per number 10  $\frac{5}{8}$  cts.

\*4522—Crucible Covers, of black-lead, best make.

No. 0 1 2 3 4 5 6 8 10 12 14 16 18 and upwards.  
Each, \$0 25 25 25 25 25 25 37  $\frac{1}{2}$  37  $\frac{1}{2}$  37  $\frac{1}{2}$  45 45 45 2  $\frac{1}{2}$  cts. per number.

\*4525—Crucibles, of black-lead, Fletcher's.

No.	00	0	1	2	3	6
Height	57mm.	63mm.	76mm.	89mm.	102mm.	165mm.
Diameter	51mm.	60mm.	63mm.	70mm.	95mm.	114mm.
Capacity	0 25	0 38	1	2	3	5 5 kilo. copper.
Each	\$0 47	0 47	0 51	0 58	0 70	1 40
Doz.	5 00	5 00	5 50	6 25	7 50	15 00

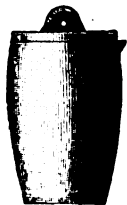
\*4530—Ditto, of charcoal, for blow-pipe use, small, per gross \$4 00; per doz.... \$ 0 38

\*4540—Ditto, of clay, for blow-pipe use, small; per gross \$3 75; doz ..... 35

\*4550—Ditto, of clay, on foot (Tutten), doz ..... 1 25



4550



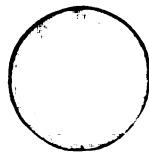
4520 &amp; 4522



4530



4540



4495 to 4505

\*4560—Crucibles, of clay, Battersea, round form without covers. (Illustr. p. 205.)

	A	B	C	D	E	F	G	H	J
Original cask contains	1800	1200	750	500	500	500	400	300	300 crucibles.
Height in mm.	67	77	89	102	115	127	143	149	169 mm.
Diameter in mm.	42	48	57	60	73	77	93	96	112 mm.
Height in inches	2 $\frac{3}{4}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	5 $\frac{3}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{4}$ in.
Diameter in inches	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{7}{8}$	3	3 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$ in.
Each	\$0 05	05	07	09	12	14	19	19	27
Per doz.	0 38	45	65	73	1 15	1 25	1 73	1 80	2 60
Per 100	2 77	3 37	4 87	5 40	8 62	9 37	12 90	13 50	19 50

By original cask, per 100

	K	L	M	N	O	P	Q	R
Original cask contains	200	100	150	75	50	40	30	20 crucibles
Height in mm.	184	203	216	248	254	280	305	331 mm.
Diameter in mm.	121	134	146	165	178	197	213	238 mm.
Height in inches	7 $\frac{1}{4}$	8	8 $\frac{1}{2}$	9 $\frac{3}{4}$	10	11	12	13 in.
Diameter in inches	4 $\frac{3}{4}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{2}$	7	7 $\frac{3}{4}$	8 $\frac{1}{2}$	9 $\frac{1}{2}$ in.
Each	\$0 28	48	57	78	1 17	1 33	1 60	2 07
Per doz.	2 70	4 80	5 60	7 80	11 60	13 25	15 60	20 60
Per 100	20 25	32 00	42 00					

By original cask, per 100

18 00 32 00 37 33 52 00 77 67 88 33 104 00 137 33  
Casks for No. 4560 charged extra!

REMEMBER OUR DISCOUNT.

**4561—Crucible Covers, for Battersea round Crucibles No. 4560.**

	A	B	C	D	E	F	G	H	J
Each	\$0 05	05	05	05	07	10	12	14	14
Per doz	45	45	45	45	65	85	1 10	1 30	1 30
Per 100	3 00	3 00	3 00	3 00	4 33	5 67	7 33	8 67	8 67
	K	L	M	N	O	P	Q	R	
Each	\$0 19	10	23	28	35	40	40	47	
Per doz	1 77	1 82	2 22	2 80	3 38	3 95	3 97	4 65	
Per 100	11 73	12 13	14 80	18 67	22 53	26 33	26 40	31 00	

**Casks for No. 4561 charged extra!****\*4565—Crucibles, of clay, Battersea, triangular form, without covers.**

	S	T	U	V	W	X	Y	Z
Original cask contains	250	250	500	750	1500	1800	2000	2500 crucibles.
Height in mm.	115	102	89	83	67	64	57	46 mm.
Diameter in mm.	105	96	83	73	67	57	57	46 mm.
Height in inches	4½	4	3½	3¼	2¾	2½	2½	1¾ in.
Diameter in inches	4¼	3¾	3¼	2¾	2¾	2¼	2¼	1¾ in.
Each	\$0 19	14	10	09	07	05	05	04
Per doz.	1 75	1 30	95	73	60	45	40	30
Per 100	13 12	9 75	7 12	5 40	4 50	3 37	3 00	2 25

By original cask per 100.

**Casks for No. 4565 charged extra!****4566—Crucible Covers, for Battersea triangular Crucibles No. 4565.**

	S	T	U	V	W	X	Y	Z
Each	\$0 14	14	12	10	10	07	07	05
Per doz.	1 30	1 30	1 10	87	87	65	65	45
Per 100	8 67	8 67	7 33	5 67	5 67	4 33	3 00	

**Casks for No. 4566 charged extra!**

4570



4565



4574 &amp; 4575



4560

**\*4570—Crucibles, of clay, Battersea, copper assay, Cornish form and quality.**

Nest of two,	Per nest	\$ 0 19
3¾ in. = 86 mm. high, 3¼ in. = 83 mm. diam.	Per doz. nests	1 75
2¾ in. = 67 mm. high, 2½ in. = 60 mm. diam.	Per 100 nests	13 14
	By original cask of about 250 nests,	
	Each	10
	Per doz.	90
	Per 100	6 75
Single,	By original cask of about 500	
2½ in. = 64 mm. high, 2¼ in. = 73 mm. diam.	Per 100	6 00

**Casks for No. 4570 charged extra!****\*4574—Crucibles, of clay, Battersea, Colorado form or lead assay, soft. These crucibles are very smooth inside. Soft Crucibles are always furnished unless hard is specified.****NO 4574 ARE THE BEST CRUCIBLES MADE.**

	AA	A	B¹	B²	B
Original cask contains	1000	800	800	800	700 crucibles.
Capacity	5grm.	10grm.	12½grm.	15grm.	20grm.
Height in mm.	70mm.	79mm.	84mm.	92mm.	95mm.
Diameter in mm.	60mm.	67mm.	70mm.	73mm.	76mm.
Height in inches,	2¾ in.	3¼ in.	3¼ in.	3½ in.	3¾ in.
Diameter in inches,	2½ in.	2¾ in.	2¾ in.	2¾ in.	3 in.
Each	\$0 05	07	07	08	09
Per doz.	45	55	56	65	79
Per 100	3 37	4 12	4 20	4 82	5 74
By original cask per 100	3 00	3 67	3 75	4 30	5 14

**Casks for No. 4574 charged extra!**

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*4575—Crucibles, <sup>4</sup>/<sub>100</sub> clay, Battersea, Colorado form or lead assay, hard. (Illustr. p. 205.)

	AAA	AA	A	B
Original cask contains,	1200	1000	800	700 crucibles
Capacity	4 grm.	5 grm.	10 grm.	20 grm.
Height in mm.	60mm.	70mm.	79mm.	95mm.
Diameter in mm.	57mm.	60mm.	67mm.	76mm.
Height in inches,	2 $\frac{3}{8}$ in.	2 $\frac{3}{4}$ in.	3 $\frac{1}{8}$ in.	3 $\frac{3}{4}$ in.
Diameter in inches,	2 $\frac{1}{4}$ in.	2 $\frac{3}{8}$ in.	2 $\frac{3}{4}$ in.	3 in.
Each	\$0 05	05	07	09
Per doz.	44	45	55	79
Per 100	3 15	3 37	4 12	5 74
By original cask, per 100	2 80	3 00	3 67	5 14

Casks for No. 4575 charged extra!

\*4580—Crucibles, of clay, Gold Assay, or Annealing Cups, Battersea. They are perfectly smooth and of proper porosity, and of superior make. (Illustr. p. 207.)

	A	B	C	D
Height in mm.	27	32	38	51mm.
Diameter in mm.	27	32	38	45mm.
Height in inches,	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2 in.
Diameter in inches,	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$ in.
Each	15	15	15	15
Per doz.	1 40	1 40	1 40	1 40
Per 100	11 08	11 08	11 08	11 08
Covers for same, each	05	05	05	05
Covers for same, per doz.	40	40	40	40
Covers for same, per 100	3 17	3 17	3 17	3 17

\*4590—Crucibles of clay, Battersea, iron assay. (Illustr. p. 207.)

	Height in mm.	Diam. in mm.	Height in inches.	Diam. in in.	Each.	Per doz.	Per 100.	By original cask, per 100.
No. A	86mm.	48mm.	3 $\frac{3}{8}$ in.	1 $\frac{7}{8}$ in.	\$0 09	73	5 40	4 80
No. B	95mm.	54mm.	3 $\frac{3}{4}$ in.	2 $\frac{1}{8}$ in.	10	95	7 12	6 33
No. C	107mm.	60mm.	4 $\frac{1}{4}$ in.	2 $\frac{3}{8}$ in.	14	1 30	9 75	8 67

Number contained in an original cask: 1000 A, 750 B, or 500 C.

Casks for No. 4590 charged extra!

\*4596—Crucibles, Battersea Fluxing, identical with French Crucibles No. 4610 in quality, form and capacity. (Illustr. p. 207.)

No.	Height mm.	Height in.	Diameter mm.	Diameter in.	Approximate Number contained in an original cask.	By Original Cask per 100.	Per 100	Per Doz	Each.
0	50	2	30	1 $\frac{1}{8}$	5000	\$ 2 00	\$ 2 25	\$ 0 30	\$ 0 04
1	55	2 $\frac{1}{8}$	33	1 $\frac{1}{4}$	4000	3 00	3 38	45	05
2	60	2 $\frac{3}{8}$	36	1 $\frac{1}{2}$	3000	4 00	4 50	60	06
3	70	2 $\frac{3}{4}$	42	1 $\frac{5}{8}$	2500	5 00	5 63	75	08
4	80	3 $\frac{1}{8}$	46	1 $\frac{7}{8}$	2000	6 00	6 75	90	09
5	90	3 $\frac{3}{8}$	50	2	1200	7 00	7 88	1 05	11
6	100	3 $\frac{5}{8}$	55	2 $\frac{1}{8}$	1000	8 00	9 00	1 20	12
7	110	4 $\frac{1}{4}$	62	2 $\frac{3}{8}$	500	9 00	10 13	1 35	14
8	120	4 $\frac{3}{4}$	68	2 $\frac{5}{8}$	500	11 00	12 38	1 65	17
9	135	5 $\frac{1}{8}$	74	2 $\frac{7}{8}$	500	14 00	15 75	2 10	21
10	150	5 $\frac{3}{4}$	80	3 $\frac{1}{8}$	400	16 50	18 56	2 48	25
11	165	6 $\frac{1}{2}$	86	3 $\frac{3}{8}$	250	22 50	25 31	3 38	34
12	185	7 $\frac{1}{4}$	95	3 $\frac{3}{4}$	200	28 50	32 06	4 28	43
13	200	7 $\frac{3}{4}$	105	4 $\frac{1}{8}$	150	38 00	42 75	5 70	57
14	220	8 $\frac{3}{4}$	115	4 $\frac{3}{8}$	120	46 20	51 98	6 93	70
15	240	9 $\frac{3}{4}$	125	4 $\frac{5}{8}$	100	62 70	69 54	9 40	94
16	255	10	130	5 $\frac{1}{8}$	75	69 30	77 06	10 40	1 04
17	270	10 $\frac{3}{4}$	140	5 $\frac{3}{8}$	60	79 20	89 10	11 88	1 19
18	285	11 $\frac{1}{4}$	145	5 $\frac{5}{8}$	50	94 05	105 80	14 10	1 41
19	300	11 $\frac{3}{4}$	152	6	40	105 60	118 80	15 84	1 59
20	320	12 $\frac{1}{2}$	160	6 $\frac{1}{4}$	30	125 40	141 05	18 81	1 89

Casks for No. 4596 charged extra!

REMEMBER OUR DISCOUNT.



**4597—Crucible Covers, for Battersea Fluxing Crucibles.**

No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Per 100	\$3	00						4	50	6	00	7	50	9	00	12	00	15	00	18	00
Per Doz	0	45						0	68	0	90	1	13	1	35	1	80	2	25	2	70
Each	0	05						0	07	0	09	0	12	0	14	0	18	0	23	0	27

**Casks for No. 4597 charged extra!****\*4605—Crucibles, of black-lead, Battersea, for tin assay.**

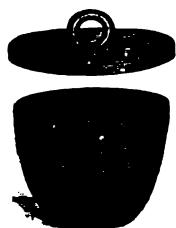
Height 83 mm. (=3¼ in.), Diameter 77 mm. (=3 in.)

Each 50cts.; per doz. \$4 10

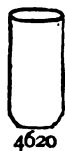
Covers for same. Each 15cts.; per doz. 1 44

An extra discount of 10% by original  
cask will be allowed on crucibles in addition  
to special discount.**\*4610—Crucibles, of clay, French (real BEAUFAY). They are made of clay, free from iron, impart no color to fluxes, and withstand a high heat.**

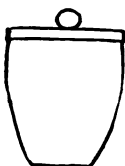
No.	1	2	3	4	5	6	7	8	9	10	11
Height...	57	60	73	79	89	102	121	131	136	152	165mm.
Diam.....	35	38	41	48	51	54	63	73	76	79	82mm.
Per Doz.	\$0 60	75	1 05	1 20	1 35	1 50	1 72	1 95	2 25	3 00	4 10
Each.....	6	8	10	12	14	15	18	20	23	33	41
Covers.....											
Per Doz.	\$0 40	45	45	50	75	80	95	1 00	1 20	1 35	1 75
Each.....	5	5	5	6	8	8	10	11	12	14	18
No.	12	13	14	15	16	17	18	19	20	21	22
Height....	100	203	219	229	254	280	285	310	335	350	388mm.
Diam.....	95	102	114	114	127	130	146	152	159	162	178mm.
Per Doz.	\$5 25	7 90	8 80	10 20	10 80	14 75	15 00	20 00	23 00	31 00	39 00
Each.....	53	79	88	1 02	1 10	1 50	1 50	2 00	2 30	3 10	3 90
Covers....											
Per Dz.	\$1 85	2 00	2 25	2 50	2 75	3 10	3 50	4 00	5 00	6 50	7 50
Each.....	19	20	23	25	28	30	35	40	50	65	75



4626



4620



4615



4610



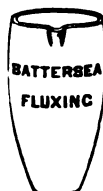
4580



4611



4605



4596



4590

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*4611—Crucible Supports, of clay, French, (Beaufay).**

For Crucibles, No. 1 to 5 6 to 10 11 to 15 16 to 22.

**\*4615—Crucibles, of copper, with cover, for regenerating copper oxide.**

Diameter..... 6 6.5 8cm.

Height..... 5 5.5 6cm.

Each..... \$0 85 1 00 1 40

**\*4620—Ditto, of cast-iron, with cover,**

Approximate Capacity, 125cc. 250cc. 500cc. 1 lit. 1.9 lit. 3.8 lit.

\$0 94 1 25 1 85 2 50 3 75 5 60

**\*4626—Crucibles, of light wrought-iron, with cover.**

Approximate Capacity, 15cc. 30cc. 60cc. 125cc. 250cc.

Height..... 31mm. 38mm. 51mm. 60mm. 76mm.

Diam..... 38mm. 54mm. 63mm. 79mm. 95mm.

Each..... \$0 45 55 75 1 10 1 65

**Crucible, Normal School, Skidmores'. See No. 8071.****\*4630—Ditto, of wrought iron, very heavy, best German make.**

Height 11cm. Diam., 7 to 7.5cm. each \$ 4 50

**\*4635—Crucibles, of pure wrought nickel, including covers.** When working with alkali solutions they are to be preferred to platinum crucibles, which are apt to be ruined by them. They have the shape of platinum crucibles No. 4640, only not quite as high.

Diam..... 3.5 4 5 6 8 10cm.

Each.. \$1 00 1 25 1 55 2 00 2 90 3 75

- \*4640—Crucibles, of platinum, with covers, best make, non-blistering. These crucibles weigh with covers about as many grammes as they hold cubic centimeters. All sizes. **At lowest market price!**

When ordering, state capacity in cubic centimeters.

**Platinum Crucibles of other shape furnished to order.**

- \*4645—Crucibles, of platinum, with cover and perforated bottom and cup; Gooch's platinum filters, used in the determination of carbon.

Capacity..... 15                      20                      25                      30cc.

Approximate weight..... 20                      25                      30                      35 grammes.

**At lowest market price.**

- \*4645/1—Ditto, of platinum, according to Dr. Gooch, as used in iron analysis for the determination of combined water and carbon in carbonaceous matter. **At lowest market price.**

- 4646—Ditto, of Berlin Porcelain, Gooch's, with cover; with narrow rim at bottom instead of perforated bottom; to be used with a perforated platinum or porcelain disc. **Otherwise, same shape as No. 4647.** Capacity, 30cc. Each .....

\$ 0 45

**Perforated Platinum Discs for same. At lowest market price.**

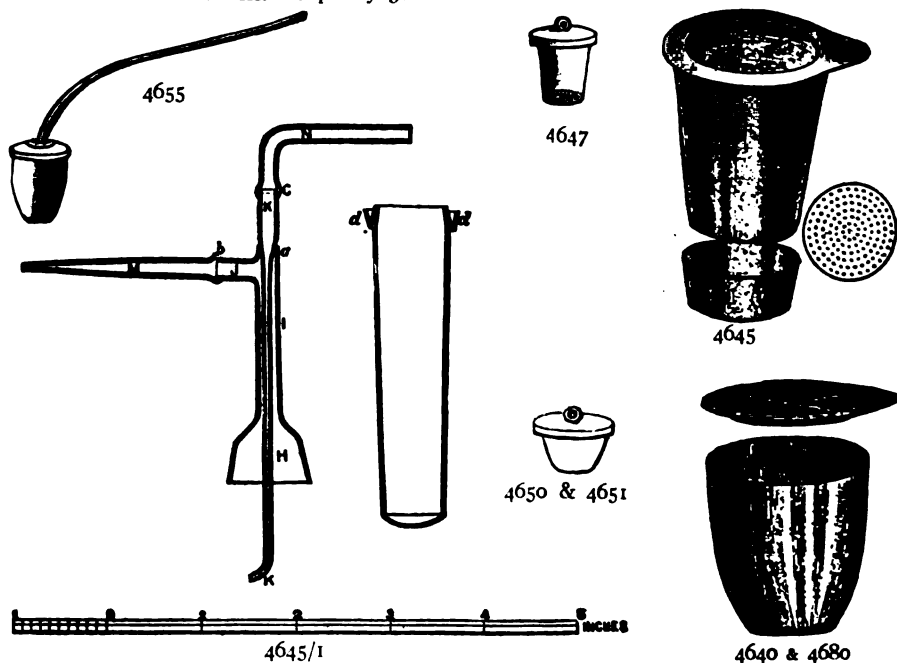
**Perforated Porcelain discs for same; each .....**

20

- \*4647—Ditto, of Berlin porcelain, Gooch's, with cover and perforated bottom. Capacity 30cc .....

62

REMEMBER OUR DISCOUNT.



- \*4650—Ditto, of Royal Berlin Porcelain, conical form, glazed inside and outside, thin and uniform.

	No.	000	00	0	1	2	3	4	5
Diameter.....		32	37	41	46	56	67	81	96mm.
Capacity.....		8	12	17	26	50	80	145	265cc.
Price with covers, each ..	\$0	15	22½	31	37½	50	62½	75	87½
Price without covers, each		10	18	25	30	42	50	62	70

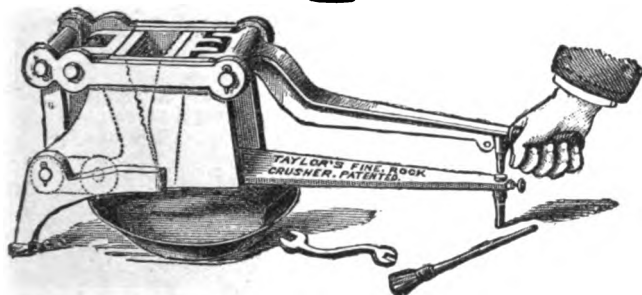
- \*4651—Ditto, of Berlin Porcelain, exactly of the same shape and size as the Royal Berlin No. 4650, with covers. **WE GUARANTEE THEM to be of at least as good quality as the Royal Berlin.**

	No.	000	00	0	1	2	3	4	5
Diameter.....		32	37	41	46	56	67	81	96mm.
Capacity.....		8	12	17	26	50	80	145	265cc.
Price with covers, each ..	\$ 0	12	18	25	30	40	50	60	70
Price without covers, each		08	14½	20	24	33½	40	50	56

- \*4655—Ditto, of Berlin porcelain, Rose's, with perforated cover and tube.

	15	30	60cc
\$0	93	1 25	1 85

- \*4656—Crucibles, of Berlin porcelain, with perforated cover, for Rose's Crucible, 15cc. capacity..... \$ 0 50  
 4657—Ditto, ditto, without cover for Rose's Crucible, 15cc. capacity..... 25  
 4658—Crucible Tube only, of porcelain, for Rose's Crucible..... 65  
 \*4660—Crucibles, of unglazed porcelain, with cover, round and triangular.  
     40      80      130      180      230      440      1000cc.  
     Each    \$ 25      30      35      45      50      85      1 20  
 \*4665—Crucibles, of Royal Meissen porcelain, with covers, glazed inside and outside.  
     No..... 0      1      2      3      4      5      6      7      8      9      10      11  
     Diam..... 75      80      70      65      55      45      40      35      30      23      18      14mm.  
     Capacity..... 240      180      135      105      60      35      30      15      7.5      4      2      1cc.  
     Each      \$ 90 40 75 10 55 4 24 50 30 37 26 20 24 20 23 19 22 16 21 15 14 15 11  
 \*4670—Ditto, of Meissen porcelain, with flat bottom and cover, for blow-pipe use..... 0 25



4691

\*4675—Crucibles of Sand, Hessian, best quality, triangular.

Number in Nest.	Approximate dimensions of largest Crucibles.	Approximate number in a bbl. cask	Per Nest.	Per Dozen Nests.	Per 100 Nests by full bbl.	Per 100 Nests by cask.
Threes.....	3-Height 7.6cm.; width at top 8.2cm.	600 2500	\$ 10	70	5 25	4 75
Small Fives, 4-Height 10.2cm.; width at top 7.6cm.		300 1400	12 95	7 35	6 65	
Lge. Fives.....	5-Height 11.5cm.; width at top 9.6cm.	130 750	21 1 90	14 70	13 35	
Sixes.....	6-Height 14.6cm.; width at top 12.1cm.	75 350	43 3 90	29 35	26 65	
Eights.....	7-Height 17.1cm.; width at top 15. cm.	40 175	70 6 75	51 20	46 50	
Inside Crucibles, smaller than Threes, 2 in a Nest.....			6 45	3 50	3 00	
Inside Crucibles, smaller than Threes, 3 in a Nest.....			7 1/2 65	4 70	4 25	
Inside Crucibles, size about like Threes, 2 in a Nest.....			7 1/2 65	4 70	4 25	
Inside Crucibles, size about like small Fives, 2 in a Nest.....			10 80	6 25	5 65	
Inside Crucibles, size about like large Fives, 2 in a Nest.....			16 1 50	11 55	10 50	

These are only furnished if we have breakage of outside crucibles.

4676—Crucible Covers for Hessian triangular Crucibles No. 4675.

	3s small	5s large	6s	8s
Each.....	\$ 07	11	15	28
Doz.....	70	1 05	1 45	2 10

\*4677—Crucible Supports for Hessian Crucibles.

	For lge. 5s	6s	8s	1s
Each.....	\$ 15	25	30	50
			50	1 00

4680—Crucibles, of pure silver, with covers (Illustr. p. 208).

Capacity, 20. 25. 30. 40. 50. 60. 75. 100. 150. 200. cc.

Per gramme.....

13

4681—Crucibles, of pure aluminium. Any size to order at lowest rates!

\*4691—Crusher, Taylor's Patent Rock Fine Crusher, hand size, very powerful. The hardest ores can easily be crushed to fine powder in this machine. Weight 43 kilos.....  
 Extra jaws for same.....

41 65  
2 10

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

## \*4692—Crusher, for ore, Bosworth's. An excellent ore crusher.

(Illustr. p. 211.)

Hand Crusher.....	\$ 50 00
Hand Crusher, with pulley.....	53 25

## \*4695—Crusher and Pulverizer combined, Surman's No. 1; to reduce all substances, from clay to pig iron, to an impalpable powder in a very short time. It is the only hand machine ever offered for sale which will crush and pulverize coarse material at one operation, and discharge the finished product as soon as pulverized.

This machine will pulverize all kinds of ores, rocks, coal, clays, pig iron and amalgamating gold ores.

This Crusher and Pulverizer will do the work of **two other machines**, a rock breaker and buck-board, or mortar, and therefore it is **very cheap** at price asked. It will pulverize **faster** than any other hand machine **ever invented**.

It is easy to clean as there are no joints or corners for pulverized material to stick in. It revolves easier when pulverizing material than it does when empty.

It is the only **Hand Machine** that **discharges the material as soon as pulverized**.

The working surfaces are tempered as hard as steel can be tempered, thereby minimizing the wear.

The Crusher and Pulverizer has been in constant use for over four years so that our claims for the machine have been thoroughly demonstrated.

The cover of the machine is made so it can be used for a small hand mortar, the ends of the handles being rounded to form a pestle.

With both handles in position, it is very easy to lift out the pestle to clean the mortar; a brush for cleaning is sent with every machine. Another use for the handles in position is when **crushing very hard or large pieces of material, take hold of both handles and work backward and forward (or seesaw), which will crush large pieces much easier than with one handle**, and as soon as the material is crushed sufficiently take out extra handle and go on with the rotary motion.

Following are two tables showing the ordinary time required to grind 450 grammes each of **common window glass** and **pig iron**; also showing the fineness of same after passing through Pulverizer once. The pulverized product was then passed through a series of six sieves. The per cent. remaining on each sieve is shown in the following tables:

GLASS.			PIG IRON.		
40 mesh sieve .....	1/2 per cent.		40 mesh sieve .....	00 per cent.	
60 " " .....	2 1/2 "		60 " " .....	1/2 "	
80 " " .....	12 1/2 "		80 " " .....	5 1/4 "	
100 " " .....	13 "		100 " " .....	13 1/4 "	
120 " " .....	2 1/4 "		120 " " .....	4 1/2 "	
140 " " .....	10 1/4 "		140 " " .....	9 1/2 "	
Amt. passed through 140, .....	59 "		Amt. passed through 140, .....	67 "	
Total .....			Total .....		
Time of pulverizing .....			Time of pulverizing .....		
100 .....			100 .....		
7 1/4 min.			12 min.		

These tables are exact and can be substantiated in every respect. The substances were selected on account of their commonness, and because the difficulty of pulverizing them is well known.

Taking into consideration their hardness, it will be readily seen with what ease ores, rocks, clays and other substances can be pulverized to any degree of fineness with this No. 1 Crusher and Pulverizer. (Illustr. p. 211.) Price.....

\*4696—Crusher, Laboratory Stone and Ore Crusher, "Farrel's" No. 1. Size of receiving capacity 76 x 38 mm. Extreme dimensions: length 46 cm., breadth 30.5 cm., height 35.5 cm. Size of pulley 13 x 2.5 cm. Revolutions of pulley 275. Total weight 45 kilos. Weight of heaviest piece 18 kilos. This Crusher is especially designed for use in Sampling and Smelting Works, Laboratories, etc. It can be used either by hand or power (Illustr. p. 211).....

We can also furnish large crushers of any capacity of the "Farrel" type at lowest rates and shall cheerfully quote prices on application, if particulars are given.

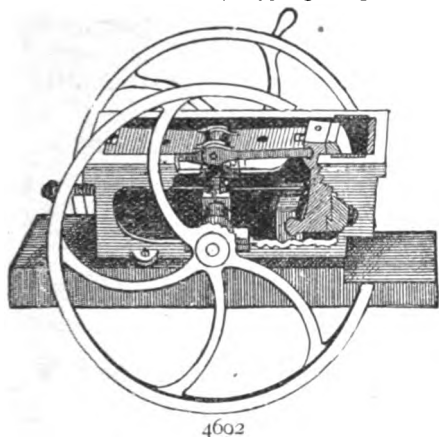
REMEMBER OUR DISCOUNT.

\$41 65

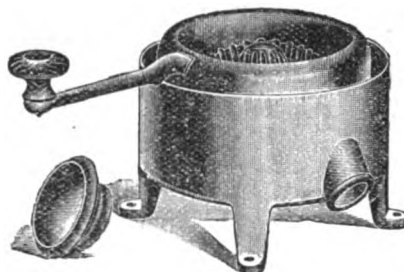
66 65

\*4697—**Crusher, Lightning Ore.** A very strong Crusher of the compound toggle joint type. Shaft and toggle pin are of steel. All wearing parts extra strong and heavy, with new devices for cleaning and adjusting.

For Hand (shipping weight 92 kilos) .....	\$ 66 65
For Hand and Power (shipping weight 94 kilos) .....	71 65
For Power (shipping weight 110 kilos) .....	80 00



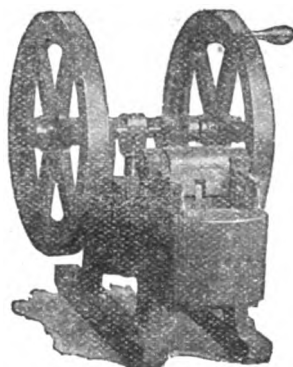
4602



4605



4697



LABORATORY SIZE

4696

**APPROXIMATE EQUIVALENTS:**

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 400 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 50 grm.

\*4698—**Crusher, Simplex Ore.** An ideal Laboratory Crusher for hand or power. Readily cleaned and adjusted. Capacity about 20 kilos per hour. **Small size.** (Illustr. p. 212.)

For Hand (shipping weight 85 kilos) .....	50 00
For Power (shipping weight 89 kilos) .....	55 00
For Power, tight and loose pulleys (shipping weight 110 kilos) .....	63 30

\*4698/1—**Ditto, Large size.** Capacity about 55 kilos per hour. (Illustr. p. 212.)

For Hand (shipping weight 154 kilos) .....	75 00
For Power (shipping weight 158 kilos) .....	80 00
For Power, tight and loose pulleys (shipping weight 170 kilos) .....	108 30

4698/2—**Crusher, Perfection Ore.** This machine will be found a great saver of time where a quantity of ore is to be crushed to a comparatively fine powder. All parts are readily accessible for cleaning; so there is no danger of salting subsequent samples. **It is without any question the most perfect crusher for laboratory use.**

For Hand and Power (shipping weight 140 kilos) .....	141 50
With tight and loose pulleys (shipping weight 155 kilos) .....	166 50

**4700—Cryophorus. See Catalogue of Physical Apparatus.****\*4707—Cups, Drinking, Retinned.**

Approximate capacity,	250	500	1000 cc.
105 x 41	114 x 50	127 x 63 mm.	
Per doz.....	\$1 25	1 45	1 80

**\*4708—Cups, Drinking, enameled like granite, deep.**

Contents,	92 x 51	98 x 57	105 x 60	111 x 67	120 x 70 mm.
240	360	475	600	710 cc.	
Per doz.....	\$3 50	3 75	4 00	4 25	4 50

**\*4709—Cups, Miners', enameled like granite.**

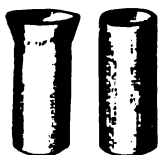
Each.....	13.3 x 11 4	16 x 13.3 cm.	
	\$0 55	0 75	

**\*4710—Cups, Porous, for galvanic batteries.**

Height,	76	105	114	127	152	178	200	250	280	280 mm.
Width,	51	51	38	51	51	63	70	100	89	76 114 mm.
Each,	\$0 15	15	20	25	28	30	32	45	75	85 1 00

**\*4715—Ditto, ditto, 38 x 95 mm, with flanged top, each 18 cts.; per doz. .... \$ 1 85**

**Any size of Porous Cups made to order in quantity of at least one hundred.**



4715

4710



4720



4708



4707

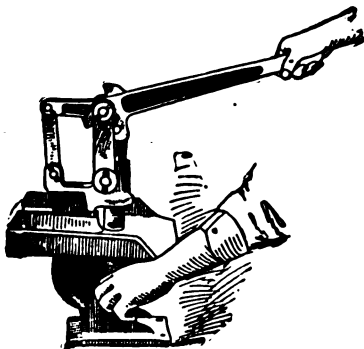


4709

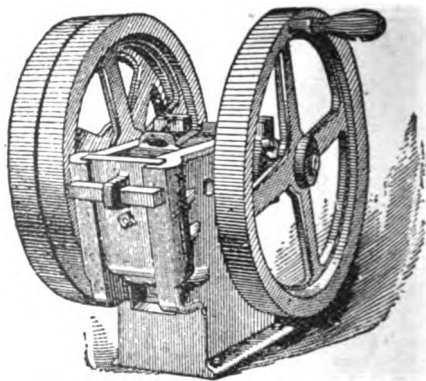


4721

**REMEMBER OUR DISCOUNT.**



4722



4698 &amp; 4698/1

**\*4720—Cupels, of best French bone-ash and superior make.**

Diam.....	25	28 1/2	32	38	45	51 mm.
Doz.....	\$0 40	50	60	70	95	1 20

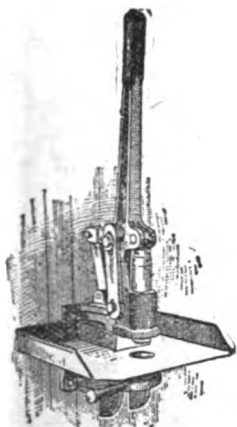
**\*I 4721—Cupels, Morganite. These Cupels will stand transit without damage and ordinary and even rough handling without crumbling. With all other Cupels there is a tendency to absorb with the lead minute quantities of the precious metals. Owing to their power of rapid absorption, the use of the Morganite Cupels reduces this loss to a minimum. It follows that assays made with Morganite Cupels are more reliable than those made with others. They are packed 100 in a box.**

	No. 1	2	3	4	5	6	7	8	9	10
Diam. at top,	19	24	27	31.5	33	35	38	44	52	60 mm.
Diam. at bottom,	14	19	20.5	24	25.5	27	30	36.5	44.5	46 mm.
Height,	11	13	14	14	14	19	18	19	24	28.5 mm.
Price per doz.,	\$0 34	39	45	50	58	95	1 17	2 35	3 75	6 65
Price per 100,	2 55	2 95	3 35	3 80	4 40	7 15	8 85	17 65	28 55	50 40

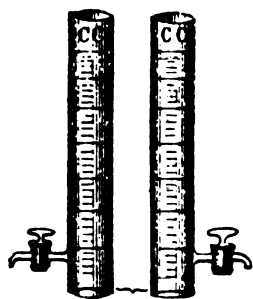
**\*4722 Cupel Machine, Calkins'.** This machine is made for interchangeable moulds and dies in sizes: 32 mm., 38 mm., and 45 mm. In ordering, mention the size or sizes wanted.  
 For any size.....  
 For all three sizes.....  
 Extra mould and die for any one size.....

33 30  
41 65  
5 80

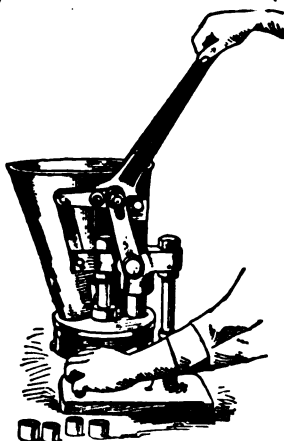
- \*4723—**Cupel Machine, Calkins' Wall.** It is made to be bolted to the wall, and it is similar in appearance and operated like No. 4722. It has no interchangeable parts, but is made in three sizes, each size Cupel requiring a separate complete machine. The sizes are for 32 mm., 38 mm. and 45 mm. Cupels. In ordering, mention the size wanted. Each machine..... \$ 25 00
- \*4724—**Cupel Machine, Calkins' Automatic.** With this machine about 600 Cupels of perfect shape, uniform in size and density can be made in one hour. It is made so that cupels of various sizes can be made by changing the disc and die. In ordering, mention the size or sizes wanted. It is made for 25 mm., 32 mm., 38 mm., 45 mm. and 51 mm. cupels.
- For any one size..... 62 50  
 For all five sizes..... 125 00  
 Extra Disc and Die for any one size..... 16 65
- \*4730—**Cylinder, of fire-clay, Erdman's; only the clay cylinder.**..... 40



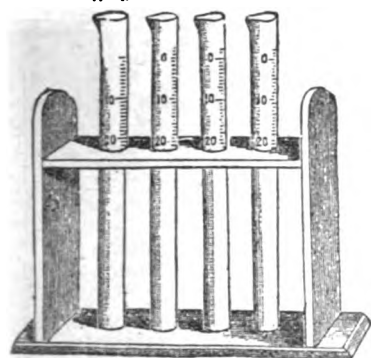
4723



4751



4724



4760/1



4761



4762



4740



4750



4730

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*4740—**Cylinder, of glass, both ends open.**  
 Length, 160 160 160 205 205 205 205 305 382 mm.  
 Diam., 50 64 77 38 50 64 90 102 134 mm.  
 Each, \$0 55 62½ 70 62½ 70 75 1 10 1 50 2 25
- \*4750—**Cylinders, of colorless glass, for Nessler's Ammonia test, with polished bottoms.**  
 Graduated 50 cc. 100 cc. 50 and 100 cc. 50, 100 and 150 cc.  
 Each, \$0 60 75 90 1 20
- \*4751—**Ditto, of glass, for Nessler's Ammonia test, modified by Hehner, with glass stop-cock; graduated 100 cc., very accurate; each.**..... 3 75
- 4760—**Ditto, of glass, graduated, for determining the percentage of cream in milk (see fig. 4760/1). Without support, each**..... 62½
- \*4760/1—**Ditto, ditto, set of four, with support.**..... 5 00
- \*4761—**Ditto, larger, on foot**..... 87
- \*4762—**Ditto, ditto, Chevalier's, with red lines**..... 1 25

\*4770—**Cylinders**, of glass, on foot, so-called **hydrometer jars**, with or without lip.

Height, 13	15.5	21	26	26	26	26	31	31	31 cm.
Width, 2.5	2.5	3.5	3.5	5	6.5	7	3.5	5	7 cm.
Each, \$0 19	24	35	44	50	62	75	50	56	90
Height, 36		38.5		40		40		45	45 cm.
Width, 3.5		5		4		5		4	5 cm.
Each, \$0 60		69		72		85		87	95

4771—**Cylinders**, of glass, on foot, with enlarged top (**Hydrometer Jars**). See **Mercury Jars No. 6640**.

\*4774—Ditto, of glass, on foot, best German, with ring around the neck.

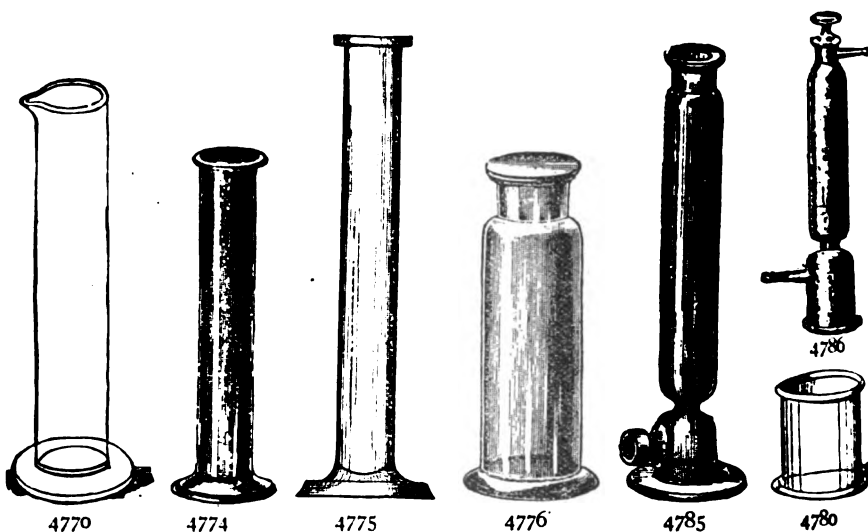
Height, 10	13	13	15	15	21	26	31	36	40	45	50 cm.
Diam., 2.5	2.5	3.5	3	5	3.5	3.5	3.5	3.5	5	5	5 cm.
Each, \$0 19	23	25	30	35	37	44	50	55	75	85	1 00

If ordered with ground top, there will be an extra charge of 12 1/2 cts. each.

\*4775—Ditto, of heavy German glass, on foot, with ground rims for glass plates.

Height, 15	21	26	26	31	36	40	60	75 cm.
Diam., 5	6	6	10	7 5	10	12	9	10 cm.
Each, \$0 50	75	1 00	1 25	1 20	2 00	3 10	3 50	5 60

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\*4776—**Cylinders, Preparation**, of clear white glass, with neck, foot and ground flat glass stopper.

Height	80	100	120	150	180	200mm.
Diameter	30	30	40	50	60	80mm.
Each, \$0 33	40	47	60	73	1 00	

4777—**Cylinders, fluted, small**, for Squibb's Urinometers. No. 6426 and No. 6427; each

\*4780—Ditto, with foot and tubulature near bottom, 35x19 cm. \$0 50

\*4785—Ditto, of glass, on foot, with tubulature near bottom, for drying gases, called **Chloride of Calcium Jars**. 6 00

Height, 21	26	31.5	35	42	47	60 cm.
Each, \$0 62	75	90	1 15	1 50	2 15	3 50

\*4786—Ditto, ditto, **new form**, according to **Fresenius**, with perforated stopper and tubulature to connect with perforation in stopper. Both tubulatures for connection with rubber tubing. Height 28 35cm

\$2 50 2 80

\*4790—**Cylinders**, of glass, on foot, with lip, best German manufacture, **graduated most accurately into cubic centimeters**. (Illustr. p. 215).

5	10	25	50	100	200	250	500	1000	2000	4000cc.
\$0 31	35	44	55	80	1 00	1 12	1 37	2 60	4 05	6 55

4791—Ditto, ditto, with double graduation.

5	10	25	50	100	200	250	500	1000	2000	4000cc.
\$0 35	44	56	69	88	1 12	1 25	1 60	3 10	4 35	7 50



\*4795—**Cylinders**, of glass, on foot, best German manufacture, with ground glass stoppers, **graduated most accurately into cubic centimeters.**

10	25	50	100	200	250	500	1000	2000	4000cc.
\$0 44	69	75	1 00	1 30	1 50	2 00	3 10	4 75	7 25

4796—Ditto, ditto, ditto, **with double graduation.**

10	25	50	100	200	250	500	1000	2000	4000cc.
\$0 50	75	87	1 12	1 45	1 60	2 15	3 45	5 30	8 10

\*4798—**Cylinder of Platinum**, for electrolytical analysis of copper.

19x51mm. Approximate } 10 grammes.

or 25x51mm. weight. } 15 grammes.

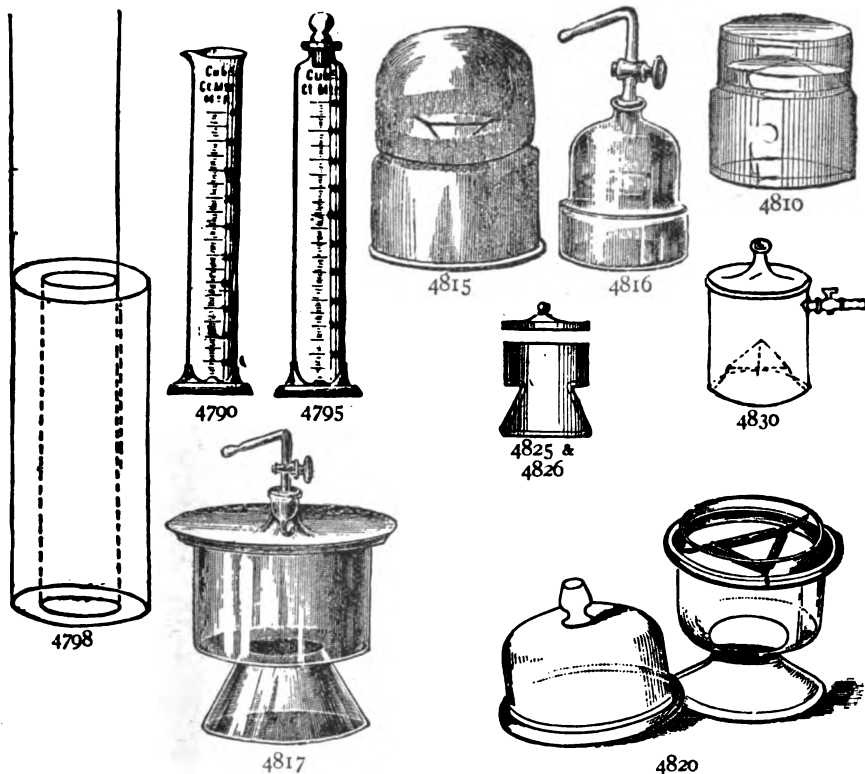
**At lowest market price.**

**Platinum Cones and Spirals for same. See No. 4372.**

4805—**Demijohns**, willow covered, with handle.

Approximate capacity	1 lit.	2 lit.	3.8 lit.	7.5 lit.	11.3 lit.	19 lit.
Each.....	\$0 55	65	80	1 20	1 60	2 00

4809—**Desiccators**, consisting of Bell glass, Glass Plate and Acid Dish.  
**See No. 1730.**



**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*4810—**Desiccator, Fresenius'**, consisting of two glass jars, with their necks ground together, with flat top, of best Bohemian glass, **with triangle, complete.**

\$ 2 00

\*4815—Ditto, ditto, ditto, with round top, **with triangle, complete.**

2 00

\*4816—Ditto, ditto, ditto, with glass stop-cock ground into the top of cover.

3 75

\*4817—Ditto, Scheibler's, with glass stop-cock ground into the top, diam. 13cm.

3 45

\*4820—**Desiccator, Atwater's, Bohemian, complete.**

2 25

\*4825—Ditto, **school of mines' pattern**, a glass jar with ground knob-top cover of flint glass; inside diameter 10cm.

1 00

\*4826—Ditto, same shape as No. 4825, but 15cm. inside diameter, called "**Scheibler's**".

1 50

4826/1—Ditto, ditto, same as No. 4826, with porcelain support, 14.5cm. diameter, to receive one or more crucibles. See Illustration 4845

3 05

\*4830—Ditto, new pattern, with glass plate tripod, side tubulature with ground glass stop-cock, for exhausting by air-pump.

3 50

\*4831—**Desiccator, Hempel's.** It has an advantage over other desiccators, the absorbent being placed in the upper part.

Height	10	15	18cm.
Diameter	10	15	15cm.
Each	\$4 35	5 30	6 80

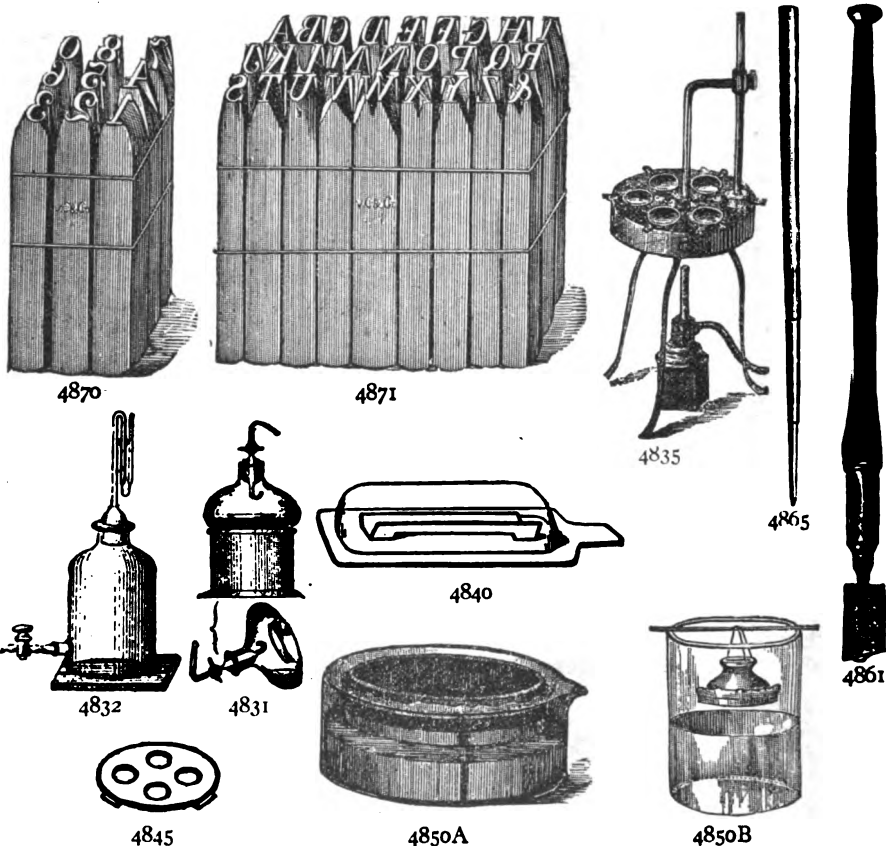
\*I 4832—Ditto, with glass stop-cock, manometer and ground glass plate..... \$ 8 75

\*4835—Ditto, according to Fresenius. A round iron plate, 38 mm. thick and 200 mm. diam., with six smooth cylindrical cavities, 57 mm. diam., which are fitted with brass pans with handles. With rod in the centre, to support the thermometer. Without burner..... 13 00

\*4840—**Desiccator**, of Bohemian glass; a small oblong bell receiver and ground glass plate, **for protecting substances from moisture while weighing**..... 1 85

\*4845—**Desiccator-Supports of porcelain**, used in desiccators for supporting crucibles, etc.  
Diameter 14.5cm..... 1 55

REMEMBER OUR DISCOUNT.



\*\*4850—**Dialyser**, with jar, fig. A and B.

	$\frac{1}{2}$ Liter	1 Liter	2 Liters	4 Liters	8 Liters
B.....	\$1 25	1 60	2 00	2 50	4 35
A.....			2 25	3 15	5 00

\*4861—**Diamond**, for cutting glass, best make, with key..... 6 70

\*4865—Ditto, for writing on glass, with ebony handle..... 3 00

**Diapasons**, see catalogue of Physical Apparatus, No. 9833, etc.

\*4870—**Dies of steel**, for marking bullion, **figures**.

Face.....	1 5	3	4 5	6	7 5	9	11	12.5mm.
Per set.....	1 00	1 05	1 30	1 65	1 95	2 65	3 95	4 95

\*4871—**Dies of steel**, for marking bullion, **letters**.

Face.....	1 5	3	4 5	6	7 5	9	11	12.5mm.
Per set.....	2 85	2 90	4 10	4 95	5 80	8 25	11 75	14 00

\*4875—**Dippers, for Mercury**, extra strong, enameled like granite, wooden handle

	127x70mm.	144x82mm.	152x89mm.	178x95mm.
Each	73	81	90	1 00
Per doz	7 88	8 78	9 78	10 80

\*4876—**Dipper, with flat handle**, enameled like granite.

	105x57mm.	108x63mm.	127x70mm.	140x76mm.
Each	36	42	48	54
Per doz	3 83	4 50	5 18	5 85

4880—**Dishes, Acid, of Meissen porcelain**, with three compartments.

	10½cm.	12cm.
	\$1.05	1.25

\*4881—Ditto, ditto, with six compartments.

	12.9cm.	12cm.	15¼cm.
	\$1.70	\$1.45	1 75

\*4882—**Dishes, Acid, of porcelain**, for use under a bell-glass, having tubulature in the centre to receive wooden supports for the vessel. Diameter, 13cm.

\$ 0 95

\*4885—**Ditto, Combustion, of Meissen porcelain**, hemispherical.

	No. 1.	No. 2.	Height.	Diameter.	Price.
			32mm.	75mm.	45 70
			20mm.	50mm.	25 20

\*4890—Ditto, of copper, 63mm. diameter.

35

4891—Ditto, ditto, 63mm. diameter, with lip.

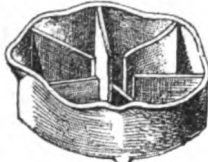
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4900 to 4903



4898



4881



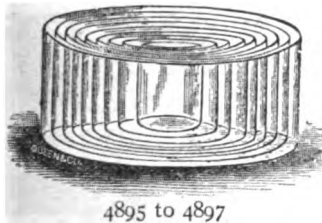
4882



4885



4890



4895 to 4897



4875



4876



4910

**APPROXIMATE EQUIVALENTS:**  
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.; 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*4895—**Ditto, Crystallizing, best Bohemian glass**, flat bottom, straight walls.

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Height	3	4	4.5	5	5.5	6	6.5	7	7.5	10.5	11.5	12.5	13.5	14.5
Diameter	5.5	6.5	7.5	9	10	11.5	13.5	14.5	16	19	22	24	26	31
	\$0 15	18	22	25	31	37	44	50	55	70	80	1 25	2 15	3 00

\*4896—Ditto, ditto, nest of 9—No. 1 to 9.

2 20

\*4897—Ditto, ditto, nest of 3—No. 10 to 12.

2 65

\*4898—Ditto, ditto, of porcelain, glazed inside, with flat bottom, straight walls and lips.

Diameter,	10.5	21.5	25.5	32	35	40cm.
	\$0 70	1 00	1 50	2 50	3 75	5 00

\*4900—Ditto, **Evaporating, of best Bohemian glass**, with lip; nest of 3—No. 4 to 6.

85

\*4901—Ditto, ditto, nest of 6—No. 1 to 6.

1 35

\*4902—Ditto, ditto, nest of 9—No. 1 to 9.

2 85

\*4903—Ditto, ditto, single.

No.	0	1	2	3	4	5	6	7	8	9	10	11	12
Diameter,	4	5	7	8	9	11	12	13	16	19	21	24	26
	\$0 14	0 15	0 18	0 22	0 25	0 31	0 37	0 44	0 55	0 70	0 80	1 20	1 50

\*4910—**Dishes, of very thin glass**, for fat analysis, to be crushed with contents in the mortar; about 7cm. diameter and 2cm. deep; (**Hoffmeister's Fat Dishes**); per doz.

1 35

\*4915—**Ditto, Evaporating, of iron, porcelain lined inside.** (Illustr. p. 218.

	700cc.	950cc.	1.9 lit.	2.8 lit.	3.8 lit.	7.6 lit.	11.4 lit.	15 lit.
Diameter	15	20	25	30.5	33	40.5	45.5	51cm.
	\$0 55	84	1 08	2 00	3 00	4 00	5 00	6 65

\*4918—Dishes, Evaporating, of stamped steel, white enameled inside, blue enameled outside. Beautiful in appearance and durable in quality.

Capacity	6 6 liters	7.5 liters	9.5 liters	13 liters	16 liters	20 liters	28 liters	38 liters
	34x10	35x12	40x13	41x14	45x14.5	49x15	63x16.5	61x18cm.
Each.....	2 25	2 50	2 75	3 33	4 00	4 67	6 65	9 17
Per dozen	20 25	22 50	24 75	30 00	36 00	42 00	60 00	82 50

\*4920—Ditto, ditto, of wrought iron, light, deep form, enameled, best German make; the most desirable iron dish made.

Approximate capacity,	250cc.	350cc.	500cc.	1 lit.	2 lit.
Diameter.....	10	12	16	18.20	22cm.
	\$0 70	1 00	2 00	2 75	3 50

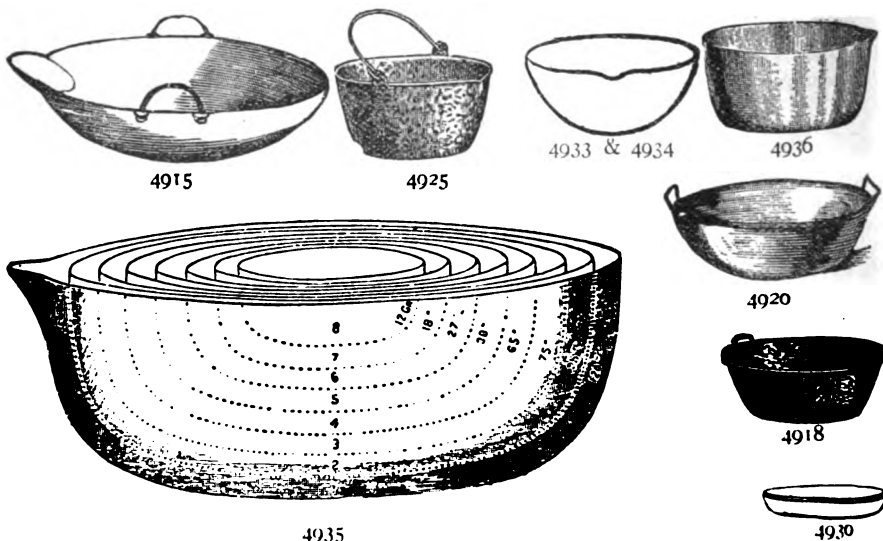
\*4925—Ditto, of iron, light, deep form, enameled like granite.

Approximate capacity	1.5 lit.	2 lit.	3.8 lit.	5.7 lit.	7.5 lit.
Diameter.....	16.5cm.	18.5cm.	22.9cm.	28cm.	28.6cm.
	\$0 42	49	75	1 00	1 15
		9.5 lit.	11.5 lit.	17 lit.	
		30.5cm	33cm.	37.5cm.	
		\$1 40	1 65	3 00	

\*4930—Ditto, of lead, for etching on glass with hydrofluoric acid.

Diameter	5	6.3	7.5	10	12.7	15.2cm.
	\$0.15	20	25	35	50	65

REMEMBER OUR DISCOUNT.



\*4933—Dishes, Evaporating, of pure wrought nickel, with lip.

Diameter	4	5	6	7	8	9	10	12	15cm.
Each.....	\$0 50	60	86	1 17	1 70	2 10	2 30	3 10	3 80

\*4934—Dishes, wrought iron, nickel-plated, plating 25 per cent of the weight of the dishes; 15cm. diameter, with lip. \$ 2 00

\*4935—Dishes, of platinum, usual form, with lip. At lowest market price.

No.	1	2	3	4	5	6	7	8	9
Diameter.....	128	115	102	89	77	64	55	41	35mm.
Depth.....	51	45	39	38	28	25	19	16	13mm.
Approximate weight	120	95	75	65	38	27	18	12	8 grammes.

Heavier or lighter dishes furnished to order, if desired.

\*4936—Ditto, ditto, deep form, with lip.

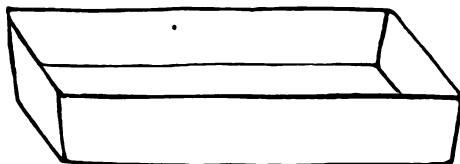
Diameter.....	41mm.	50mm.	63mm.	76mm.
Height.....	25mm.	31mm.	38mm.	45mm.

At lowest market price.

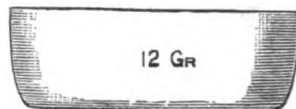
- \*4937/1—**Dishes, of platinum**, for iron analysis. With flat bottom, straight sides and with wire at the top, fused into the dish under the lip.  
 Diameter..... 90mm. 100mm. 110mm.  
 Depth..... 50mm. 55mm. 58mm.  
 Approximate weight..... 80 100 125 grammes.  
**At lowest market price.**
- 4940—**Dishes, of platinum**, shallow, shape like No 4955, but with lip.  
**At lowest market price.**
- \*4945—Ditto, ditto, square, for incineration of filters; weight about 15 grammes. **At lowest market price.**
- \*4950—Ditto, ditto, for milk analysis, with or without lip.  
 Diameter..... 50mm. 56mm.  
 Depth..... 19mm 25mm.  
 Approximate weight..... 14 17 grammes.  
**At lowest market price.**
- 4951—Ditto, ditto, ditto, with handle; of same dimensions as the foregoing.  
**At lowest market price.**
- \*4955—Ditto, ditto, for sugar analysis. Diameter, 39mm. Approximate weight 12 Grammes. **At lowest market price.**  
**Dish, Plate and Rod of Platinum. See No. 1760.**



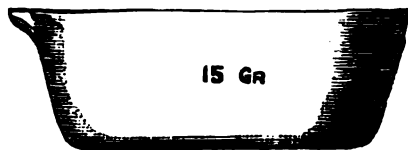
4937/1



4945



4955



4950



4960 &amp; 4961

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

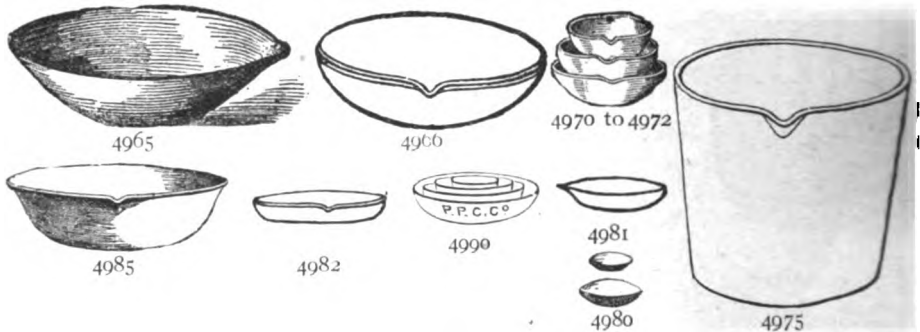
- \*4960—**Dishes, Evaporating, of Royal Berlin Porcelain**, with lip; glazed inside and out, except the bottom of the larger ones, from No. 5 upwards. The small dishes to No. 5 are nearly hemispherical, the larger ones are shallow.
- | No.      | 00      | 0  | 1   | 2   | 3   | 4   | 5   | 6        |
|----------|---------|----|-----|-----|-----|-----|-----|----------|
| Diameter | 7       | 8  | 8.5 | 9   | 10  | 11  | 12  | 14.5 cm. |
| Capacity | 50      | 80 | 100 | 140 | 175 | 210 | 300 | 385 cc.  |
| Price    | \$0 22½ | 25 | 37½ | 40  | 44  | 56  | 69  | 87½.     |
- No. 7 8 9 10 11 12
- | No.      | 7      | 8    | 9    | 10   | 11   | 12         |
|----------|--------|------|------|------|------|------------|
| Diameter | 18.5   | 21.5 | 26.5 | 30.5 | 36   | 40 cm.     |
| Capacity | 765    | 1285 | 2200 | 3250 | 5700 | 10,000 cc. |
| Price    | \$1 06 | 1 50 | 2 20 | 3 45 | 4 40 | 10 00      |
- \*4961—**Dishes, Evaporating, of Berlin Porcelain, with lip, exactly of the same shape and size as the Royal Berlin No. 4960. WE GUARANTEE THEM to be at least as good in quality as the Royal Berlin.** (No. 000 are without lip.)
- | No.      | 000    | 00 | 0  | 1   | 2   | 3   | 4   | 5   | 6        |
|----------|--------|----|----|-----|-----|-----|-----|-----|----------|
| Diameter | 2.5    | 7  | 8  | 8.5 | 9   | 10  | 11  | 12  | 14.5 cm. |
| Capacity | 15     | 50 | 80 | 100 | 140 | 175 | 210 | 300 | 385 cc.  |
| Price    | \$0 11 | 19 | 21 | 32  | 34  | 37  | 48  | 58  | 74       |
- No. 7 8 9 10 11 12
- | No.      | 7      | 8    | 9    | 10   | 11   | 12         |
|----------|--------|------|------|------|------|------------|
| Diameter | 18.5   | 21.5 | 26.5 | 30.5 | 36   | 40 cm.     |
| Capacity | 765    | 1285 | 2200 | 3250 | 5700 | 10,000 cc. |
| Price    | \$0 90 | 1 26 | 1 84 | 2 95 | 3 85 | 8 50       |

\*4965—Dishes, Evaporating, of Berlin Porcelain, with lip, glazed inside, shallow form. From No. 0000 to 7 with light rim; from No. 8 to 14 with heavy rim.

No.	0000	000	00	0	1	2	3	4	5	6
Diameter	6 5	8	9.5	11.5	14	17	19.5	23 5	26	28.5 cm.
Capacity	40 cc.	85 cc.	100 cc.	175 cc.	290 cc.	470 cc.	700 cc.	1 liter.	1.5 liters.	2 liters.
	\$0 16	20	25	37	43	55	68	87	1 05	1 25
No.	7	8	9	10	11	12	13	14		
Diam	30	31.5	34	38.5	40.5	45	47.5	49.5 cm.		
Capacity	3 liters.	3.5 liters.	4.5 liters.	5.5 liters.	7.5 liters.	9.5 liters.	13 liters.	20 liters.		
	\$1 55	1 90	2 35	3 00	4 00	5 35	7 50	12 00		

\*4966—Ditto, Evaporating, of Berlin Porcelain, with lip, glazed inside; deep form, with heavy rim.

No.	000	00	0	1	2	3	4	5	6	
Diameter	44.5	42	36 5	31.5	29	26	23.5	21	18.5 cm.	
Capacity	15	12	8	5	3.7	2.5	1.9	1.2 liters.	900 cc.	
	\$8 65	5 65	4 25	2 65	2 25	1 80	1 35	1 10	90	
No.	7	8	9	10	11	12	13	14	15	
Diameter	16	13	11.5	11	10	9.5	8	7.5	7 cm.	
Capacity	650	400	300	200	170	140	100	75	60 cc.	
	\$0 70	55	45	40	37	31	27	25	18	



\*4970—Dishes, Evaporating, of Berlin Porcelain, hemispherical. Nest of 5—No. 1 to 5

\*4971—Ditto, ditto. Nest of 9—No. 1 to 9

\*4972—Ditto, ditto.

No.	0	1	2	3	4	5	6	7	8	9
Diameter	3	6	7	8 5	10	11	12.5	14	15.5	17 cm.
Capacity	20	45	75	120	150	200	270	360	420	525 cc.
	\$0 12 1/2	15	19	25	31	37	44	50	56	62

\*4975—Ditto, Evaporating, of Berlin Porcelain, very deep form, so-called "evaporating kettle," with flat bottom; capacity, 20 liters.

\*4980—Ditto, Evaporating, of Berlin Porcelain, watch-glass shape, small

\*4981—Ditto, porcelain, shallow, with pointed lip, small; 4 in nest; for microscopy

\*4982—Ditto, porcelain, with straight walls and lip.

No.	1	2	3	4	5	6	7	8	9
Diameter	7	8	9.5	10.5	12	14	16	18	20 cm.
Each	\$0 25	30	38	45	50	65	75	90	1 05

\*4983—Ditto, Plattner's shallow dishes, for blow-pipe use; in nests of 3 (see No. 3960).

\*4985—Dishes, Evaporating, of Royal Meissen Porcelain, with lip, shallow.

No.	000	00	0	1	2	3	4	5	
Diameter	40	36.5	34	30	27.5	25	22	19 cm.	
Capacity	8700	6200	4750	3750	2250	1700	1100	870 cc.	
	\$7 50	6 25	4 75	3 75	2 25	1 70	1 10	87 00	
No.	6	7	8	9	10	11			
Diameter	16.5	13.5	12.3	11	8.3	6.5 cm.			
Capacity	525	280	190	120	50	20 cc.			
	\$0 90	62 1/2	45 50	37 1/2	25 20	19 24			

\*4990—Ditto, Roasting, of Clay, Battersea.

Diameter in inches	2 1/2	3	4	5	6 in.
Diameter in mm	64	77	102	127	152 mm.
Each	\$0 09	11	12	15	28
Dozen	87	1 07	1 20	1 47	2 80

\*4992—Ditto, Roasting, Freiberg: 66 mm.; per doz.

REMEMBER OUR DISCOUNT.

4996—**Dishes, Sampling, for ore samples**, enameled like granite, similar to No. 4997, but shallower.

	15 cm.	18 cm.	20 cm.	23 cm.	25 cm.
Each.....	\$0 25	27	32	36	41
Per doz.....	2 75	3 00	3 50	4 00	4 50

\*4997—**Dishes, Sampling, large sizes**, deeper, enameled like granite.

	23 cm.	25 cm.	28 cm.	30 cm.
Each.....	\$0 39	47	57	72
Per doz.....	4 25	5 25	6 25	8 00

\*4998—**Dishes, Sampling**, tinned iron.

	10 cm.	12.5 cm.	15 cm.	18 cm.
Diameter.....	10 cm.	12.5 cm.	15 cm.	18 cm.
Per doz.....	\$0 40	60	70	80

\*4999—**Dishes, Stender**, for microscopic work, of clear glass, top surface accurately ground into a groove in the cover, making an air-tight fit.

	35 mm.	51 mm.	60 mm.	60 mm.
Diameter.....	35 mm.	51 mm.	60 mm.	60 mm.
Height.....	19 mm.	25 mm.	28 mm.	89 mm.
Each.....	\$0 20	23	27	32

\*4999/1—Ditto, flat cover with groove, ground air-tight to the dish; **finest imported.**

	5x10 cm.	7x14 cm.	8x15 cm.
Each.....	\$1 00	1 85	2 05



4999



4999/2



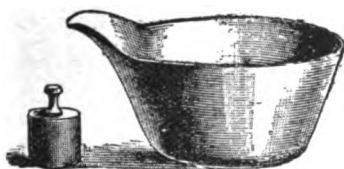
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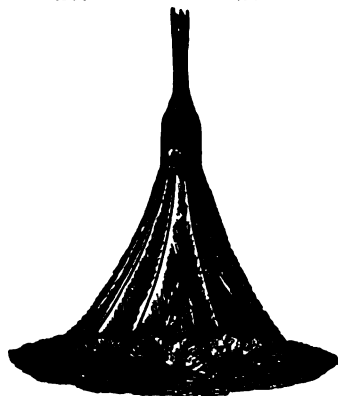
4998



4999/1



5006



5007

\*4999/2 Ditto, with plate glass cover with groove, ground air-tight to the dish, **finest quality.**

	40	60	80	100	120	150 mm.
Diameter.....	40	60	80	100	120	150 mm.
Height.....	20	25	30	40	50	60 mm.
Each.....	\$0 33	37	53	67	1 13	1 33

4999/3—Ditto, exactly like No. 4999/2, but high form.

	60	80	100 mm.
Diameter.....	60	80	100 mm.
Height.....	70	100	120 mm.
Each.....	\$0 53	60	75

5000—**Dishes, of pure silver**, like fig. 4935; any size made to order. Per gramme

\$ 0 15

5001—**Dishes, of pure Aluminium.** Made to order in any size or shape at lowest price.

5005—**Dishes, of German Silver**, for sugar analysis, small, without lip; in sets of three, with counterpoise

4 75

\*5006—Ditto, ditto, large dish, with lip and counterpoise

3 75

\*5007—**Dusters, of Ostrich Feathers**, bell.

No	5	6	7	8	9	10	11	12	13	14	16	18	20	22
Each.....	\$0 30	0 45	0 60	0 68	0 98	1 35	1 80	2 48	2 85	3 90	4 20	4 35	4 50	4 65
Per doz.....	2 50	3 75	5 00	5 65	8 15	11 25	15 00	20 65	23 75	32 50	35 00	36 25	37 50	38 75

5008—**Dusters, of Turkey Feathers.**

No	10	11	12	13	14	15	16
Each.....	\$0 68	75	90	1 05	1 20	1 30	1 40
Per doz.....	5 65	6 25	7 50	8 75	10 00	12 65	11 90

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

**\*5009—Dynamometers.** They are used for ascertaining the draft of plows, mowing machines, wagons and cars. Can be attached to a tackle on derrick for hoisting hay, feed, or cargo of any description, the weight of which can at once be read on dial. It will also show what weight a horse or any animal can pull, by securing one end and hitching an animal to the other.

Ranging from 0 to 500 or 2,000 lbs. (=230 to 910 kilos) .....	\$ 45 00
Ranging from 0 to 3,500 lbs. (=0 to 1,600 kilos) .....	52 50
Ranging from 0 to 5,000 lbs. (=0 to 2,275 kilos) .....	60 00
Ranging from 0 to 10,000 lbs. (=0 to 4,550 kilos) .....	100 00

5009/3, etc.—**Dynamos.** See Catalogue of Physical Apparatus.

5010/1, etc.—**Electromagnets.** See Catalogue of Physical Apparatus.

5015/1, etc.—**Electro-Motors.** See Catalogue of Physical Apparatus; see also Dynamos in Catalogue of Physical Apparatus.

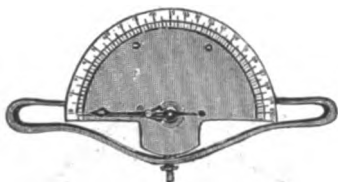
5020—**Emery Cloth;** per sheet, 10 cts.; per quire .....

1 50

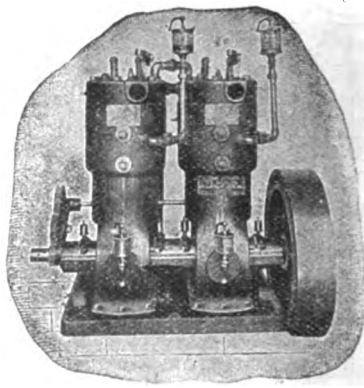
5025—**Emery Paper;** per sheet, 5 cts.; per quire .....

50

REMEMBER OUR DISCOUNT.



5009



5026/9



5040

**\*5026/9—Engines, Gas or Gasoline Power, "Marine."**

	Horse Power.	Speed.	Size Fly Wheel. cm.	Size of Base. cm.	Extreme Height. cm.	Weight Kilos.	
Single Cylinder.	2	500	40.6	30.5x30.5	58.4	135	\$ 355 00
	4	400	50.8	30.5x30.5	71.	234	406 00
	6	400	58.4	30.5x30.5	78.7	278	638 00
	8	375	66.	43.2x45.7	89.	383	850 00
	10	385	66.	43.2x45.7	89.	428	992 00
Double Cylinder.	8	450	50.8	51. x102.	71.	439	1,063 00
	12	400	58.4	51. x107.	78.7	495	1,240 00
	16	400	66.	56. x107.	89.	630	1,417 00
	20	375	66.	61. x122.	89.	810	1,700 00

**Larger sizes up to 40 Horse Power at lowest prices!**

**5026/10—Engines, Gas or Gasoline Power, "Two Cycle Compression Type."**

	2	4	6 Horse Power.
	\$237 50	348 30	459 15

**5030—Ether Jet.** See Catalogue of Physical Apparatus.

**\*5040—Eudiometers, Bunsen's.** A glass tube with platinum wires inserted into the glass, graduated into millimeters

300	400	500	600	700 mm.
\$2 50	2 90	3 10	3 50	3 75

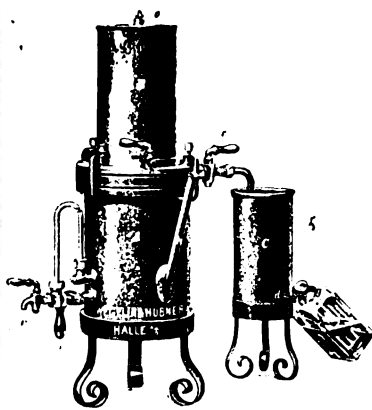


- 5045—**Eudiometers, Bunsen's**, fig. 5040, graduated into  
 50 cc. in  $\frac{1}{8}$       100 cc. in  $\frac{1}{2}$       100 cc. in  $\frac{1}{4}$   
 \$2 50      3 10      3 45
- \*5050—Ditto, ditto, ditto, new style, extra heavy, with glass stop-cock near bottom. **Mitscherlich's**, graduated into millimeters.  
 300      400      500      600 mm.  
 \$3 75      4 15      4 35      4 75
- \*5055—**Eudiometers, Ure's**, U shape, 50 cc. in  $\frac{1}{8}$  ..... \$ 3 00  
 5055—Ditto, **Crook's**, with platinum wires inserted; same shape as No. 5066 ..... 2 50  
 \*5066—Ditto, **Crook's**, without platinum wires ..... 2 00  
 (For other Gasometer Tubes, see No. 9655.)
- \*I 5067/8—**Extraction Apparatus for laboratory use, W. & H.'s**, of improved construction. It is made of copper, and consists of the Extraction and Distilling Apparatus A, the Condenser B, the Cooling Apparatus C and the iron tripod supports. Without burner.  
 Capacity of the Extraction Apparatus 1      2      3      5 lit.  
 Each ..... \$300 00    325 00    350 00    400 00
- Extraction Cups. See Nutschen Cups No. 7418/15.**
- \*5067/12—**Extraction Thimbles** (also called Extraction Cartridges), of fat-free paper, Schleicher & Schuell's No. 603, for use in extraction apparatus for the determination of fat in milk, etc. They prevent the material, which is in the process of extraction, from entering the solvent. They can be used a good many times. In boxes of 25.

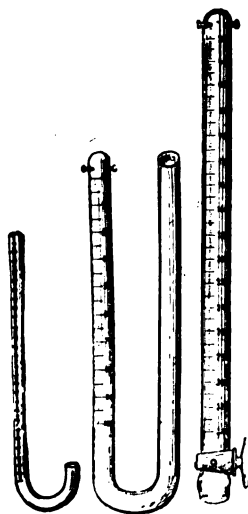
Per box of 25	80x22 mm.	80x33 mm.	90x19 mm.	94x33 mm.	123x43 mm.
	\$2 85	3 05	2 87	4 00	6 40



5067/12



5067/8



5066

5055

5050

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

5068—**Faucets, red cedar**, for kegs and barrels.

	15 cm.	20 cm.	23 cm.	25 cm. long.
Each .....	\$0 15	0 15	0 20	0 25
Per doz.....	90	1 00	1 25	1 75

5070—**Files, flat, best English.**

7.5 cm.	10 cm.	12.7 cm.	15.2 cm.	17.8 cm.	20.3 cm.
\$0 22	0 25	0 30	0 35	0 40	0 50

5075—Ditto, round, best English (rat-tail files).

7.5 cm.	10 cm.	12.7 cm.	15.2 cm.	17.8 cm.	20.3 cm.
\$0 20	0 20	0 25	0 30	0 35	0 43

5080—Ditto, triangular, best English.

7.5 cm.	10 cm.	12.7 cm.	15.2 cm.	17.8 cm.	20.3 cm.
\$0 15	0 19	0 25	0 30	0 37	0 43

5090—**File Handles**, each, 10cts.; per doz ..... 75

**\*5100—Filtering Bags, of best white French felt.**

No	1	2	3	4	5
Size	19x20	20x20.5	20.5x23	28x30.5	33x38 cm.
Capacity	1 lit.	1.9 lit.	2.8 lit.	3.8 lit.	4.7 lit.
	\$0 85	1 00	1 15	1 58	2 00
No	6	7	8	9	10
Size	35.5x40.5	40.5x48	46x53	51x58	56x63.5 cm.
Capacity	6.4 lit.	7.5 lit.	11.3 lit.	15.1 lit.	20.8 lit.
	\$2 33	2 75	3 15	3 80	5 80

**\*5110—Filter Case, of japanned tin, to hold cut filters, up to 19 cm. \$ 3 75****\*5120—Filtering Cups, of glass.**

	9 cm.	12 cm.
	\$0 40	0 55

**\*5130—Filter Dryer, of porcelain, to dry precipitates on the filter 1 85****\*I 5136—Filter Flasks, of porous Royal Berlin porcelain. (The small Filter Flasks have short necks.)**

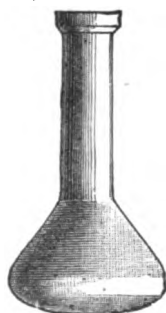
	small.	medium.	large.	extra large.
Each	\$0 50	0 95	1 75	2 50

**\*I 5137—Filter Tube, of porous Royal Berlin porcelain 1 05****\*5140—Filter Hooks, of glass, to hang between the funnel and filter.**

For	10	13	16	20	23 cm. funnels.
Each	\$0 06	0 08	0 10	0 12	0 14
Per doz.	60	75	90	1 00	1 25

**Filters, of platinum. See No. 4272.****5142—Filter Tube, of platinum, for carbon determination. At lowest market price.**

5120



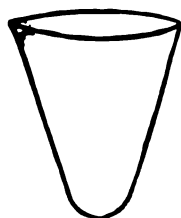
5130



5110



5130



5100



5137



5140



5173 to 5175/I

**5150—Filtering-Paper, French, Prat Dumas', gray, square, 53x43 cm.**

Per 25 sheets, 47cts Per 1000 sheets 13 00

**5155—Ditto, ditto, white, 53x43 cm. Per 25 sheets, 57cts. Per 1000 sheets.. 15 65****5160—Ditto, ditto, gray, round.**

Diameter 80 100 cm.

Per 100 \$7 00 9 75

**\*5173—Filtering-Paper, H. H. C. Co's blue label, gray. It filters clear and rapidly.**

Diameter 15 20 25 33 38 45 50 61 cm.

Per 100 \$0 25 35 50 70 95 1 25 1 50 1 95

**\*5174—Ditto, ditto, blue label, white, the best filtering paper for qualitative work.**

Diameter 7.5 10 12.5 15 20 25 33 38 45 50 61 cm.

Per 100 \$0 12 16 22 27 40 55 80 1 05 1 40 1 65 2 15

**\*5175/1—Ditto, ditto, blue label, white, same high-grade quality as****No. 5174, 38x48 cm. Per 1000 sheets, \$14 30. Per 25 sheets**

Per bale of 5000 sheets..... 52

65 10

**REMEMBER OUR DISCOUNT.**

**CARL SCHLEICHER & SCHUELL'S FILTERING-PAPER.**

We carry the largest stock of the various grades of filtering-paper, manufactured by Schleicher & Schuell, in this country, and can supply large quantities more promptly than any other house.

Amount of Ash left after incineration of S. & S.'s Filtering-Paper No. 589 and 590.

Diameter of filter	5.5	7	9	11	12.5	15 cm.
No. 589 1 2 3	0,0005	0,0009	0,0015	0,0023	0,0030	0,0043
No. 589 * and No. 590	0,0002	0,0003	0,0005	0,0007	0,0009	0,0013

5180—**Filtering-Paper, German, white, a good light paper, 47x54 cm., S. & S. No. 595;** per 25 sheets, \$0 89; per 1000 sheets..... \$ 30 85

5181—Ditto, ditto, much heavier than the foregoing, 58x58 cm., S. & S. No. 597; for rapid and clear filtration; per 25 sheets, \$1 65, per 1000 sheets..... 59 00

5182—Ditto, ditto, extra heavy, 58x58 cm., S. & S. No. 598; per 25 sheets, \$2 90, per 1000 sheets..... 98 35

5183—Ditto, ditto, heavy and strong, adapted for filtering lacquers, fruit juices, syrups and oils, 54x58 cm., S. & S. No. 591; per 25 sheets, \$2 75, per 1000 sheets..... 95 00

5184—Ditto, ditto, folded, S. & S. No. 588. The 50 cm. size is made of heavier material than the smaller sizes.

Diameter	12.5	15	18.5	24	32	38.5	50cm.
Per pack of 100	\$0 56	70	80	1 15	1 90	2 50	4 30
Per 1000	5 20	6 50	7 40	10 55	17 60	23 15	40 50

5184/1—Ditto, ditto, folded, S. & S. No. 580, with parchment points.

Diameter	32	38.5	50 cm
Per pack of 100	\$2 37	3 00	4 95
Per 1000	22 00	27 80	46 60

5184/2—**Filtering-Paper. S. & S. Hardened Filters' No. 575.**

In a damp state these filters are almost as hard and durable as parchment paper and stand a pressure of 2 to 3 atmospheres, while retaining the finest precipitates. They can be used for filtering large quantities without fear of tearing, and they can be used several times, as the precipitate can be scraped off. The smaller sizes, from 4 to 7 cm., can be used in place of platinum cones or for supporting large filters.

Diameter	4	5.5	7	9	11	12.5	15	18.5	24	27	32	38.5	50cm.
Per 100	\$0 70	84	98	1 34	1 64	1 90	2 20	2 85	4 40	5 80	7 05	9 00	15 00
Per 1000	6 45	7 77	9 07	12 40	15 20	17 60	20 35	26 20	39 60	52 20	63 45	81 00	135 00

5184/3—Ditto, in rolls, No. 566, 50 meters long, 65 cm. wide and 2 mm. thick. An extra soft and quick filtering-paper, especially adapted for filtering large quantities of liquids. Per roll of 50 meters..... 8 00

5184/4—Ditto, **Drop Reaction Paper No. 601**, in sheets 22x14 cm., thickness 5 mm. This paper absorbs quickly drops of liquids without spreading, and it is better adapted for drop tests than the method of using a porcelain plate.

Per sheet 6cts., per 25 sheets \$1 04. Per 100 sheets..... 2 67

5185—Ditto, ditto, cut in round filters, S. & S. No. 595.

Diameter,	5.5	7	9	11	12.5	15	18.5	24	32	38.5 cm.
Per 100	\$0 16	18	26	31	33	48	60	1 00	1 65	2 05
Per 1000	1 48	1 67	2 41	2 87	3 05	4 45	5 55	9 45	15 75	19 70

5186—Ditto, ditto, cut in round filters, S. & S. No. 597.

Diameter,	5.5	7	9	11	12.5	15	18.5	24	32	38.5cm.
Per 100	\$0 22	27	37	45	50	62	85	1 25	1 90	2 50
Per 1000	2 13	2 50	3 52	4 17	4 63	5 92	8 15	12 03	18 50	23 60

5186/1—Ditto, ditto, cut in round filters, S. & S. No. 604; same quality as No. 597, but not as closely woven. It therefore filters more rapidly than No. 597, and should not be used for very fine precipitates.

Diameter	5.5	7	9	11	12.5	15	18.5 cm.
Per 100	\$0 22	27	37	45	50	62	85
Per 1000	2 13	2 50	3 52	4 17	4 63	5 92	8 15

5187—Ditto, ditto, washed with hydrochloric and hydrofluoric acids, cut in round filters, S. & S. No. 589\*, white ribbon; most salable kind, retaining the finest precipitates.

Diameter,	5.5	7	9	11	12.5	15 cm.
Per 100	\$0 84	98	1 34	1 64	1 90	2 20
Per 1000	7 77	9 07	12 40	15 20	17 60	20 35

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

5187/1—**Filtering-Paper**, washed with hydrochloric and hydrofluoric acids, cut in round filters, **S. & S. No. 589<sup>1</sup>, black ribbon, soft and loose texture; filters very rapidly**, but does not retain fine precipitates.

Diameter	5.5	7	9	11	12.5	15 cm.
Per 100	\$0 84	98	1 34	1 64	1 90	2 20
Per 1000	7 77	9 07	12 40	15 20	17 60	20 35

5187/2—Ditto, ditto, ditto, cut in round filters, **S. & S. No. 589<sup>2</sup>, blue ribbon, hard and compact texture; filters slower than No. 5187 (No. 589<sup>1</sup>) and No. 5187/1 (No. 589<sup>1</sup>), but is very strong and adapted for the use with filtering-pump. It retains the very finest precipitates, which cannot be retained by No. 5187, (No. 589<sup>2</sup>).**

Diameter	5.5	7	9	11	12.5	15 cm.
Per 100	\$0 84	98	1 34	1 64	1 90	2 20
Per 1000	7 77	9 07	12 40	15 20	17 60	20 35

I 5187/3—Ditto, ditto, ditto, cut in round filters, **S. & S. No. 589<sup>3</sup>, yellow ribbon, medium, extracted by ether in addition to having been extracted by Hydrochloric and Hydrofluoric Acids; otherwise they are of the same quality as No. 5187 (No. 589<sup>1</sup>).**

Diameter	5.5	7	9	11	12.5	15 cm.
Per 100	\$1 06	1 12	1 76	2 00	2 32	2 80
Per 1000	9 81	10 37	16 30	18 50	21 48	25 90

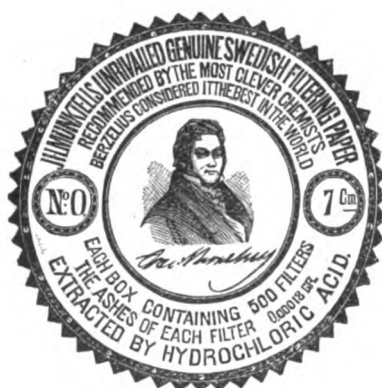
\*I 5187/4—**Filtering-Paper, S. & S. No. 577, made up in solid cones, to fit any funnel of 60°.** They filter very rapidly and are especially adapted for ethereal and fat oils, salt solutions, etc.

Length of side	6	8	10	12	14	16	20	25 cm.
Per 100	\$3 40	3 70	3 85	5 20	6 00	7 00	9 35	11 35

5188—Ditto, ditto, ditto, cut in round filters, **S. & S. No. 590.** Contains less ash than No. 5187, but filters slower.

Diameter,	5.5	7	9	11	12.5	15 cm.
Per 100	\$1 06	1 12	1 76	2 00	2 32	2 80
Per 1000	9 81	10 37	16 30	18 50	21 48	25 90

REMEMBER OUR DISCOUNT.



5189



5188/15 to 5192



5187/4

### J. H. MUNKTELL'S SWEDISH FILTERING-PAPER.

100 cc. of distilled water will pass through a filter of Munktell's Paper of 15 cm. diameter, placed in a funnel of 7½ cm., as follows:

through	No.	0	1F	2
in		176	230	191 seconds.

### Actual Amount of Ash of the J. H. Munktell's Filtering-Papers:

Diameter of filter.	No. 00 Grm.	No. 0 Grm.	No. 1F Grm.	No. 2 Grm.
5.5 cm.	0.000011	0.000060	0.00014	0.00018
7 cm.	0.000018	0.00010	0.00023	0.00030
9 cm.	0.000030	0.00017	0.00038	0.00051
11 cm.	0.000045	0.00025	0.00056	0.00074
12.5 cm.	0.000058	0.00033	0.00073	0.00095
15 cm.	0.000083	0.00048	0.00105	0.00138
18.5 cm.	0.000126	0.00070	0.00161	0.00209
Percentage	0.008	0.045	0.125	0.135

\***5188/15—FILTERING-PAPER, No. 00, J. H. MUNKTELL'S SWEDISH, IS THE BEST PAPER FOR QUANTITATIVE ANALYSIS**, absolutely free from all impurities. It is washed with hydrochloric and hydrofluoric acids, removing traces of iron, alumina, lime, etc. **The ash is reduced to a minimum and the highest standard of purity secured.** Cut in round filters, 100 filters in a package, 5 packages in a box.

Diameter,	5.5	7	9	11	12.5	15	cm.
Per 100 filters, \$	0 75	82½	1 20	1 50	1 65	1 87½	
Per 1000 filters,	6 67	7 33	10 67	13 33	14 67	16 67	

\***5189—FILTERING-PAPER, NO. 0, J. H. MUNKTELL'S SWEDISH, IS A VERY FINE PAPER FOR QUANTITATIVE ANALYSIS**, free from impurities. It is washed with hydrochloric acid, removing traces of iron, alumina, lime, etc. **It contains only a very small amount of ash.** A uniform and quick filter, retaining fine precipitates, adapted to the most precise requirements of analytical work. Cut in round filters, 100 filters in a package, 5 packages in a box.

Diameter,	5.5	7	9	11	12.5	15	18.5	cm.
Per 100 filters, \$	0 30	40½	63	82½	94¼	1 27½	1 87½	
Per 1000 filters, \$	2 67	3 60	5 60	7 33	8 40	11 33	16 67	
Cut in square sheets, 48x48 cm. Per 24 sheets								\$ 3 00

\***5190—FILTERING-PAPER, NO. 1F, J. H. MUNKTELL'S SWEDISH.** Uniform in thickness; best linen material; most perfect filtering paper made; leaves the smallest amount of ash of any unwashed paper. Very strong; adapted to the highest grade of chemical work. The finest precipitates are retained. In round filters, 100 filters in a package, 5 packages in a box.

Diameter,	5.5	7	9	11	12.5	15	18.5	cm.
Per 100 filters, \$	0 16½	24	37½	45	60	75	1 12½	
Per 1000 filters, \$	1 47	2 13	3 33	4 00	5 33	6 67	10 00	
Cut in square sheets, 48x48 cm., weight 5 kilos per ream. Per 24 sheets, \$1 65; per ream.								25 33

**5190/1—FILTERING-PAPER NO. 100, J. H. MUNKTELL'S SWEDISH. Extra heavy.** It filters rapidly and will retain the finest precipitates. In round filters, 100 filters in a package.

Diameter,	5.5	7	9	11	12.5	15	18.5	cm.
Per 100 filters, \$	0 16½	21	31½	40½	49½	64½	82½	
Per 1000 filters, \$	1 47	1 87	2 80	3 60	4 40	5 73	7 33	
Cut in square sheets, 48x48 cm. Weight 7.65 kilos per ream. Per 24 sheets, \$1 50; per ream.								25 33

\***5191—FILTERING-PAPER NO. 2, J. H. MUNKTELL'S SWEDISH.** A pure white linen paper, heavier than No. 1F, and not as closely woven, therefore more rapid in filtration. A superior paper for qualitative analysis and highly satisfactory for all general laboratory work. In round filters, 100 filters in a package, 5 packages in a box.

Diameter,	5.5	7	9	11	12.5	15	18.5	cm.
Per 100 filters, \$	0 15	19½	30	39	46¼	60	79½	
Per 1000 filters, \$	1 33	1 73	2 67	3 47	4 13	5 33	7 07	
Cut in square sheets, 48x48 cm. Weight 6.4 kilos per ream. Per 24 sheets, \$1 35; per ream.								21 33

\***5192—FILTERING-PAPER NO. 3, J. H. MUNKTELL'S SWEDISH.** A pure white paper, heavier than No. 2; filters rapidly. Fully equal to the high-grade German papers, but at less cost than other paper of same quality and weight. In round filters, 100 filters in a package.

Diameter,	5.5	7	9	11	12.5	15	18.5	cm.
Per 100 filters, \$	0 12	15	22¼	27	36	48	61¼	
Per 1000 filters, \$	1 07	1 33	2 00	2 40	3 20	4 27	5 47	
Cut in square sheets, 48x48 cm. Weight 7.6 kilos per ream. Per 24 sheets, \$1 12½; per ream.								17 33

**5194—Filtering-Paper, Baker & Adamson's.** Made of Swedish Filtering-Paper, washed in Hydrochloric Acid (single washed). In round filters, 100 filters in a box.

Diameter,	5.5	7	9	11	12.5	15	cm.
Per 100 filters, \$	0 22½	45	67½	82½	90	1 27½	
Per 1000 filters,	2 00	4 00	6 00	7 33	8 00	11 33	

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

5194/1—**Filtering-Paper, Baker & Adamson's.** Made of Swedish Filtering-Paper, washed in Hydrochloric and Hydrofluoric Acids (double washed). The thin paper is designated "A", the thick paper "B." In round filters, 100 filters in a box.

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash in each paper..	.00001	.00002	.00003	.00005	.000065	.000093grm.
Per 100 filters.....	\$0 60	75	97½	1 20	1 50	1 80
Per 1000 filters.....	\$5 33	6 69	8 67	10 67	13 33	16 00

5194/2—**Filtering-Paper, Baker & Adamson's, corrugated, washed in Hydrochloric Acid.** In packages of 100 filters.

Diameter.....	7	9	11	12.5	15	30cm.
Per 100 filters	\$0 37½	45	52½	67½	82½	2 70
Per 1000 filters	\$3 33	4 00	4 67	6 00	7 33	24 00

I 5195—**Filtering-Paper, Max Dreverhoff's, No. 207, washed with hydrochloric Acid (Rapid Filter).**

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash per filter.....	0.00016	0.0003	0.0005	0.0009	0.001	0.0016grm.
Price per 100 filters...	\$0 25	31	50	62	75	94

I 5195/1—Ditto, **Max Dreverhoff's No. 419, washed with Hydrochloric Acid (Rapid Filter).**

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash per filter.....	0.00009	0.00013	0.00027	0.00042	0.00054	0.00084grm.
Price per 100 filters....	\$0 30	42	61	85	98	1 45

I 5195/2—Ditto, **Max Dreverhoff's No. 400, washed with Hydrochloric and Hydrofluoric Acids, of remarkably close texture, retaining the finest precipitates.** Although very strong, it filters rapidly.

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash per filter.....	0.0003	0.0006	0.0009	0.0014	0.0018	0.0028grm.
Price per 100 filters...	\$0 62½	87½	1 12½	1 56	1 80	2 12½

I 5195/3—Ditto, **Max Dreverhoff's No. 417, washed twice with Hydrochloric and Hydrofluoric Acids.** It retains fine precipitates, such as Barium Sulphate, etc.

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash per filter.....	0.00002	0.00004	0.00006	0.00009	0.00012	0.00019grm.
Price per 100 filters...	\$0 75	1 06	1 56	2 00	2 19	2 62

I 5195/4—Ditto, **Max Dreverhoff's No. 206.** A superior white paper for general qualitative and pharmaceutical work, retaining fine precipitates. In sheets 45x45cm. Per ream \$10 65; per quire..... \$0 65

Diameter.....	5.5	7	9	11	12.5	15	18.5	24	32	40	50cm.
Per 100 filters	\$0 13	17	22½	26	31	38	48	71	1 26	1 80	2 70

I 5195/5—Ditto, **Max Dreverhoff's No 241.** A white filtering-paper for general use in the laboratory, where a cheap filtering-paper is desired. In sheets 39x39cm. Per ream \$6 00; per quire..... \$0

Diameter.....	5.5	7	9	11	12.5	15	18.5	24	32	40	50cm.
Per 100 filters	\$0 11	12½	16	19	22½	29	35	50	93	1 35	1 95

I 5195/6—Ditto, **Max Dreverhoff's No. 481.** A pure white paper, so't, close, rapid, heavier than No. 206. A very desirable paper for laboratory use.

Diameter.....	5.5	7	9	11	12.5	15	18.5cm.
Ash per filter.....	0.0007	0.0013	0.0019	0.0029	0.0040	0.0056	0.0084 grm.
Price per 100 filters	\$0 19	25	34	40	50	62	80

I 5195/7—Ditto, **Max Dreverhoff's No. 311. Baryta Filter,** close texture, filtering quick, yet retaining the finest precipitates

Diameter.....	5.5	7	9	11	12.5	15	18.5	24	32cm.
Ash per filter.....	0.0007	0.0013	0.0019	0.0029	0.0040	0.0056	0.0084	0.0142	0.0253 grm
Price per 100 filters	\$0 19	25	37	44	50	62	81	1 28	2 15

I 5195/8—Ditto, **Max Dreverhoff's No. 402. Ashless Rapid Baryta Filter,** washed with Hydrochloric and Hydrofluoric Acids, similar to No. 400, but more rapid.

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash per filter.....	0.00035	0.0007	0.0011	0.0016	0.0021	0.0032 grm.
Price per 100 filters	\$0 75	1 00	1 25	1 69	1 94	2 37

I 5195/9—Ditto, **Max Dreverhoff's No. 495. Toughened filtering-paper,** especially adapted for use with filter-pumps It retains the finest precipitates.

Diameter.....	5.5	7	9	11	12.5	15cm.
Ash per filter.....	0.0007	0.0013	0.0019	0.0029	0.0040	0.0056 grm.
Price per 100 filters	\$ 50	75	94	1 12½	1 25	1 44

REMEMBER OUR DISCOUNT.

I 5195/10—**Filtering-Paper, Max Dreverhoff's No. 335, folded.** A very superior, rapid filtering-paper, retaining the finest precipitates.

Diameter .....	12.5	18.5	24	32	40	50cm.
Per 100 filters	\$0 75	1 00	1 45	2 45	3 40	4 85

I 5195/11—**Ditto, Max Dreverhoff's No. 241, folded.**

Diameter .....	12.5	15	18.5	24	32	40	50cm.
Per 100 filters..	\$0 56	64	70	86	1 38	1 77	2 60
Per 1000 filters	\$5 00	5 75	6 30	7 75	12 40	15 90	23 25

5197—**Filtering-Paper, Chinese Rice Paper, tough and quick filtering,** 45.5x71cm. Ream, \$20.00; quire ..... \$ 1 25

5198—**Ditto, ditto, Japanese, for photographers' use, to filter collodion, emulsions, etc. A very strong paper. Size 28x38cm. Ream, \$5.85; quire ..... 42**

**Filtering-Paper, bibulous, to be used as pulp in filtering. See No. 7440.**

5200—**Filter Patterns.** Round discs, of metal. Set of 4,—7.5, 10, 12.5, 15 cm. 25  
Set of 5,—6, 7.5, 10, 12.5, 15 cm. 30

\*5202—**Filter-Plates, of Berlin porcelain, according to Dr. Witt.**

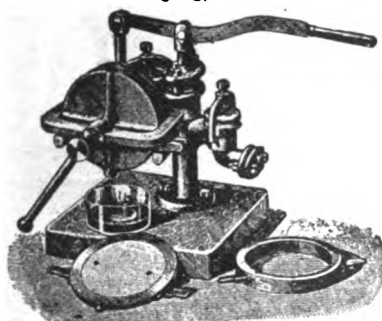
Diameter,	2	2.5	4	6	8	10	12	14.5	17.5cm.
Each,	\$0 17	18	25	36	65	85	1 10	1 50	2 10



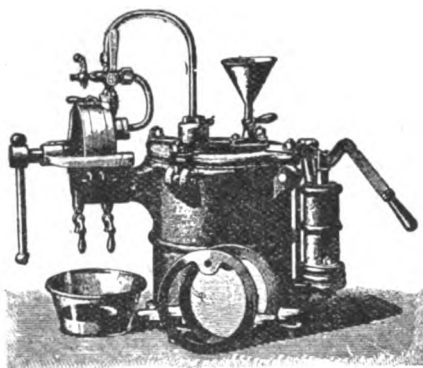
5203/1



5202



5205



5206

I 5203—**Filter-Plates, of porcelain, Kaehler's.** A round perforated plate with rubber ring, ensuring close contact with sides of funnel.

Diameter,	4	5	6	8	10cm.
Each,	\$0 55	65	75	1 10	1 45
Extra rubber rings, each	07	07	10	11	12

\*I 5203/1—**Ditto, ditto, with hole in the center of the plate and glass-rod.**

Diameter,	4	5	6	8	10cm.
Each,	\$0 65	75	85	1 25	1 65

\*I 5205—**Filter-Press, Wegelin & Huebner's patent.**

Model	Fb	Fb	Fb1	Fb1
Filtering surface	400	400	800	800sq.cm.
Press and Pump of	Iron	Bronze	Iron	Bronze
Each	\$100 00	150 00	150 00	225 00

\*I 5206—**Filter-Press, Wegelin & Huebner's patent; provided with 3 filter-frames, 10, 20 and 30mm. in thickness, complete with 3 sets of filter-cloths and wrenches. With arrangement for edulcoration.**

Model	Fa	Fa	Fa1	Fa1
Filtering Surface	400	400	800	800sq.cm.
Press of	Iron	Bronze	Iron	Bronze
Each	\$300 00	350 00	350 00	425 00

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*I 5207—**Filter-Press, Wegelin & Huebner's patent, with 2 pumps,** of which the one with lever A is used for pumping the substance to be filtered into the filter-press and the other with lever B for pumping in the edulcorating liquid. Provided with 3 filter-frames, 10, 20 and 30mm. in thickness, complete with 3 sets of filter-cloths and wrenches. With arrangement for edulcoration.

	Model	Fc	Fc	Fc1	Fc1
Filtering Surface		400	400	800	800sq.cm.
Press and Pump of		<b>Iron</b>	<b>Bronze</b>	<b>Iron</b>	<b>Bronze</b>
Each		\$150 00	200 00	200 00	275 00

- \*5210—**Filtering-ring,** of porcelain, with 2 arms ..... \$ 0 30

- \*5211—**Ditto, ditto,** with 3 arms ..... 44

- \*5220—**Filtering-racks,** of galvanized iron, to prevent the filtering-paper from adhering to the funnel, thus producing rapid filtration.

13	18	23	30cm.
\$0 45	60	85	95

- \*5230—**Finger Cots,** of rubber, for protecting the fingers while handling acids; doz. .... 60

**ALL OUR FLASKS OF BOHEMIAN GLASS ARE OF THE BEST MAKE, OF HIGH-GRADE RESISTANCE GLASS.**

- \*5240—**Flasks, Assay or Parting, best Bohemian glass, conical, with ring.**

	30cc.	60cc.	125cc.	250cc.	500cc.
Each.....	\$0 15	18	25	30	40



5220



5245 &amp; 5245/1



5240



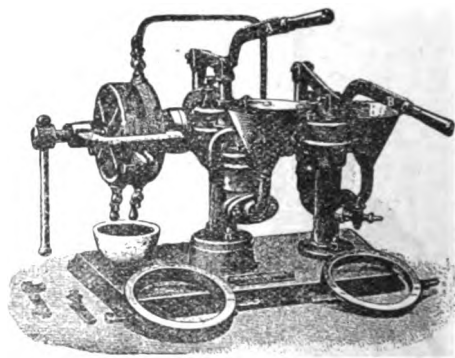
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5210



5230



5207

REMEMBER OUR DISCOUNT.

- \*5245—**Flasks, conical, of best Bohemian glass, Erlenmeyer's form, with vial mouth.** (For Erlenmeyer Beakers with lip, see No. 2960).

	15	30	60	125	180	250	350	500	750cc.	1 lit.	2 lit.	4 lit.
Each..\$	11	12	13	17	22	25	30	35	44	50	61	1 00

- \*5245/1—**Flasks, of Jena Normal Glass, conical, Erlenmeyer's form, vial mouth.**

Approximate Capacity	200	300	450cc.
Each .....	\$0 25	32	40

- \*\*5246—**FLASKS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, CONICAL, ERLENMEYER'S FORM, VIAL MOUTH.** Superior in shape and quality to any other flasks. Each flask bears our trade-mark. (Illustr. p. 231.)

(For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approximate Capacity	20	35	70	150	200	250	350cc.
Each .....	\$0 14	15	18	20	23	29	32

Approximate Capacity	500	750	1000	2000	4000cc.
Each .....	\$0 40	50	60	85	1 38

- \*5247—**Flasks, of best Bohemian glass, conical, without ring, Erlenmeyer's form, with lip.** (Illustr. p. 231.)

(For Erlenmeyer's Beakers with lip, see No. 2960).

Approximate Capacity	30	60	125	250	500cc.	1 lit.	2 lit.	4 lit.
Each .....	\$0 15	16	20	30	37	55	75	1 25



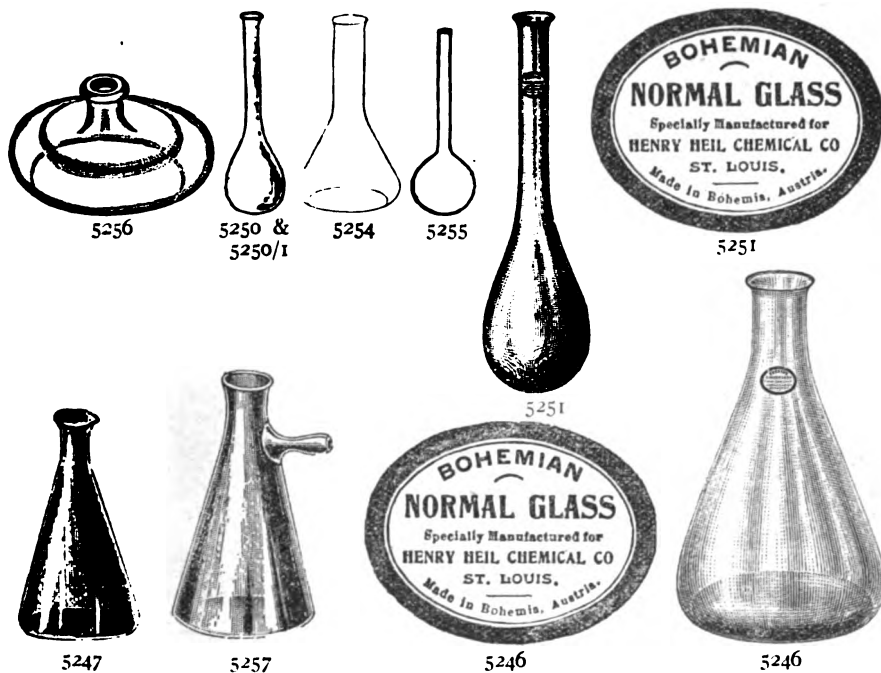
**FOR ERLENMEYER BEAKERS WITH LIP, SIMILAR TO THE FOREGOING FLASKS No. 5247. WE REFER TO No. 2960 AND 2962, WHICH HAVE WIDER NECKS THAN No. 5247.**

**\*5250—Flasks, best Bohemian glass, pear-shaped, with long neck, Kjeldahl's form.**

	60	125	250	500cc.
Each.....	\$0 16	20	25	35

**\*5250/1—Flasks, of Jena Normal Glass, Kjeldahl's form, round bottom, long neck.**

Approximate Capacity	200	300	500	800cc.
Each.....	\$0 35	44	60	70



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*\*5251—FLASKS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, KJELDAHL'S FORM, WITH ROUND BOTTOM, VIAL MOUTH AND LONG NECK.**

Superior in shape and quality to any other flasks. Each flask bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass see Preface).

Approximate capacity	200	300	500	800cc.
Each.....	\$0 31	39	54	63

**\*5254—Flasks, Parting, Montana style, of best Bohemian glass.**

	15cc.	30cc.
Each.....	\$0 14	16
Per doz.....	1 50	1 75

**\*5255—Ditto, Assay, of best Bohemian glass, round bulb, with long neck, 30 cc.; each 25 cts.; doz.....** \$ 2 50

**\*5256—Flasks, bacteriological, of best Bohemian glass.**

	300	500cc.
Each.....	\$0 40	55

**\*5257—Flasks, Erlenmeyer form, conical, with side neck, heavy Bohemian glass.**

	250cc.	500cc.	1 lit.
Each.....	\$0 44	50	75

- \*\*5258—FLASKS, FERNBACH'S, FOR ANTITOXINE CULTURE, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS. CAPACITY 1500cc. Superior in shape and quality to any other flasks. Each flask bears our trade-mark.**

(For note on H. H. C. Co.'s Bohemian Normal Ware see Preface).

- Each ..... \$1 55; per dozen ..... \$ 15 00
- \*\*5259—DITTO DITTO, with two tubulatures, 1500cc. capacity.**
- Each ..... \$2 00; per dozen ..... 20 00
- \*I 5259/1—Flasks, Fernbach's, for Antitoxine Culture.**
- Each ..... \$1 85; per dozen ..... 18 75

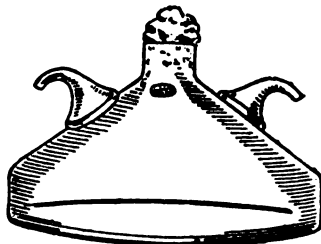
REMEMBER OUR DISCOUNT.



5258



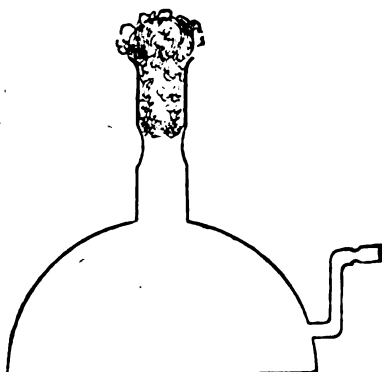
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5260  
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5259



5259/1

- \*5260—Flasks, of best Bohemian glass, walls of uniform thickness, with flat bottom and vial mouth.**

	15cc.	30cc.	60cc.	125cc.	180cc.	250cc.	350cc.	500cc.	750cc.
Each	\$0 10	11	12 1/2	15	19	22	25	30	37
	1 lit.	1 1/2 lit.	2 lit.	3 lit.	4 lit.	8 lit.	12 lit.	19 lit.	
Each	\$0 44	50	61	85	94	1 60	2 40	4 10	

- \*5261—Flasks, of best German glass, with light uniform walls, with flat bottom and vial mouth.**

	15cc.	30cc.	60cc.	125cc.	180cc.	250cc.	350cc.	500cc.	750cc.	1 lit.
Each	\$0 09	10	12	14	15	18	22	25	32	38
Per doz.	1 07	1 15	1 35	1 50	1 70	2 00	2 50	2 90	3 75	4 50
	1 1/2 lit.	2 lit.	3 lit.	4 lit.	8 lit.	12 lit.	19 lit.			
Each	\$0 50	61	85	94	1 60	2 40	4 10			
Per doz.	6 00	7 30	10 20	11 20	18 85	26 35	49 00			

- \*5262—Flasks, of Jena Normal Glass, flat bottom, vial mouth.**

Approximate Capacity	100	200	300	400	500	1000cc.
Each	\$0 21	28	36	43	50	71

**\*\*5263—FLASKS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, WITH FLAT BOTTOM AND VIAL MOUTH.**

Superior in shape and quality to any other flasks. Each flask bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approximate Capacity

	20	35	70	150	200	250	350cc.
Each	\$0 14	16	18	21	26	30	36

Approximate Capacity

	500	750cc	1 lit.	1½ lit.	2 lit.	3 lit.	4 lit.	8 lit.
Each	\$0 45	52	65	72	85	113	138	290

**\*5265—Flasks, of best Bohemian glass, with round bottom and vial mouth.**

	15cc.	30cc.	60cc.	125cc.	180cc.	250cc.	350cc.	500cc.	750cc.
Each	\$0 10	11	12½	15	19	22	25	30	37

	1 lit.	2 lit.	3 lit.	4 lit.	8 lit.	12 lit.
Each	\$0 44	61	85	94	1 60	2 40



5263



5266



5263



5266



5270



5265 &amp; 5275



5271

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*\*5266—FLASKS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, WITH ROUND BOTTOM AND VIAL MOUTH.**

Superior in shape and quality to any other flasks. Each flask bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approximate Capacity

	20	35	70	150	200	250	350cc.
Each	\$0 14	16	18	21	26	30	36

Approximate Capacity

	500	750cc.	1 lit.	2 lit.	3 lit.
Each	\$0 45	52	65	85	113

**\*5270—Flasks, of best Bohemian glass, with round bottom and heavy ring around the neck, ground off on top.**

	30cc.	60cc.	125cc.	250cc.	500cc.	750cc.	1 lit.	2 lit.	4 lit.
Each	\$0 11	12½	15	22	30	37	44	61	94

**\*5271—Flasks, of best Bohemian glass, with flat bottom and heavy ring around the neck, ground off on top.**

	30	60	125	180	250	350	500	750 cc.	1	2	4 lit.
Each	\$0 11	12½	15	19	22	25	30	37	44	61	94

- \*5272—**FLASKS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, WITH ROUND BOTTOM AND HEAVY RING AROUND NECK, GROUND OFF.** Superior in shape and quality to any other flasks. Each flask bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass, see Preface.)

Approximate capacity..... 2 liters. 3 liters. 4 liters. 8 liters.

Each..... \$0 85 1 13 1 38 2 90

- \*5275—**Flasks, of infusible Bohemian glass, for generating oxygen, etc., round bottom, vial mouth.** (Illustr. p. 233.) 100 cc. 250 cc. 500 cc.

\$0.60 70 85

- \*5281—**Ditto, of best Bohemian glass, pear-shaped, flat bottom, vial mouth.** (Illustr. p. 235.)

15	30	60	125	180	250	350	500	750 cc.
\$0 10	11	12 1/2	15	19	22	25	30	37
1 lit.		1 1/2 lit.		2 lit.	3 lit.		4 lit.	8 lit.
\$0 44		50		61	85		94	1 60



5272



5282



5283 &amp; 5283/1



5272



5282



5283

- \*5282—**FLASKS, PEAR-SHAPE, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, WITH FLAT BOTTOM AND VIAL MOUTH.** Superior in shape and quality to any other flasks. Each flask bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass, see Preface.)

Approximate capacity.... 20 35 70 150 200 250 350 500 cc.

Each..... \$0 14 16 18 21 26 30 36 45

Approximate capacity.... 750 cc. 1 lit. 1 1/2 lit. 2 lit. 3 lit. 4 lit. 8 lit.

Each..... \$0 52 65 72 85 113 138 2 90

- \*5283—**FLASKS, PEAR-SHAPE, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, FOR COPPER DETERMINATION, WITH FLAT BOTTOM AND WIDE FUNNEL-SHAPED NECK.** Superior in shape and quality to any other flasks. Each flask bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass, see Preface.)

Approximate capacity..... 70 150 200 250 350 500 cc.

Each..... \$0 21 25 30 35 40 50

REMEMBER OUR DISCOUNT.

\*5283/1—Flasks, Bohemian glass, pear-shape, for copper determination, with flat bottom and wide funnel-shaped neck. (Illustr. p. 234.)

	60	125	180	250	350	500 cc.
Each .....	\$0 18	20	23	25	30	37
Per doz .....	1 85	2 00	2 25	2 50	3 00	3 75

\*5285—Ditto, ditto, with extra wide and short neck, for carbonic acid apparatus.

	30 cc.	60 cc.	125 cc.
Each .....	\$0 15	18	23
Doz .....	1 65	2 00	2 50

\*5286—Flasks, with flat bottom, vial mouth, **WITH WIDE NECK.**

	250 cc.	350 cc.	500 cc.	1 lit.
Each .....	\$0 26	30	33	50
Doz .....	3 00	3 30	3 65	5 50

5290—Flasks, Bologna. (See Catalogue of Physical Apparatus.)

\*5295—Ditto, of best Bohemian glass, very heavy and well annealed, to be used with Bunsen's Filter Pump.

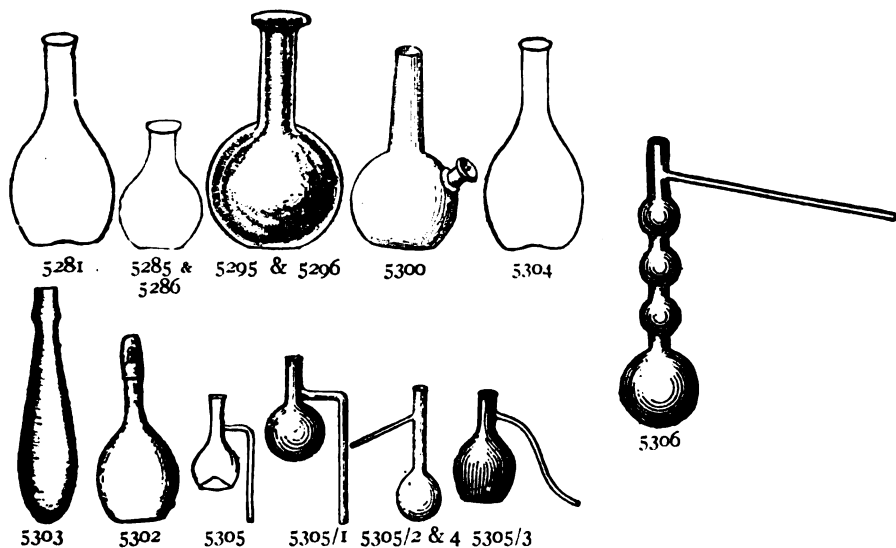
	500 cc.	1 lit.	2 lit.
	\$0 44	62	94

\*5296—Ditto, heavy, called "Joliet Flasks," with flat bottom and vial mouth.

	500 cc.	1000 cc.
Each .....	\$0 38	50

\*5300—Ditto, of best Bohemian glass, very heavy, with tubulature on bulb, 500 cc.

\$ 1 00



APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*5302—Flask, for keeping oxide of copper prepared for organic analysis.

	250 cc.	500 cc.
	\$0 60	0 75

\*5303—Flasks, Kjeldahl's, of Bohemian hard glass for nitrogen determination, also for assaying.

Capacity .....	125 cc.	250 cc.
	\$0 31	0 44

\*5304—Ditto, Kjeldahl's Digesting Flasks, of hard Bohemian glass.

	150	200	250	500	750	1000 cc.
Each .....	\$0 35	45	55	65	85	95

\*5305—Ditto, with tube on side of neck, for fractional distillations. Same prices for styles 5305/1, 2 and 3.

	30 cc.	60 cc.	125 cc.	250 cc.	500 cc.	1 lit.	2 lit.
	\$0 19	25	31	44	55	80	1 25

\*5305/4—Flasks, with tube on side of flask and round bottom, for fractional distillations, of Jena Normal glass.

Approximate capacity .....	50	100	200	500	1000 cc.
	\$0 38	40	50	75	1 13

\*5306—Ditto, for fractional distillation, Ladenburg's, with 3 or 4 bulbs on neck.

	100	200	500	1000 cc.
	\$0 50	70	1 00	1 25

\*5307—Flasks, for fractional distillation, Kreussler's, with inside condenser. (*Chem. Zeitung*. 1884, p. 1222.)

500	1000 cc.
\$1 35	2 00

\*I 5308—Flasks, for distillation under diminished pressure, Anschuetz'.

Capacity.....	15	30	60	100 cc.
Each.....	\$0 30	35	40	50

\*I 5308/1—Ditto, ditto, with trap.

Capacity.....	15	30	60	100 cc.
Each.....	\$0 45	50	65	75

\*I 5309 Flasks, distilling, according to Lunge, with trap.

Capacity.....	60	150	250	500	1000 cc.
Each.....	\$0 40	55	66	90	1 40

\*I 5309/1—Flasks, Distilling, according to Emery, with bent tube to prevent liquids from spurting over.

Capacity.....	60	150	250	500	000 cc.
Each.....	\$0 25	31	50	62	94

\*I 5312—Flasks, according to Giles, glass-stoppered, with a smaller bulb above the body of the flask; with 2 marks.

Lower mark.....	500 cc.	1000 cc.	2000 cc.
Upper mark.....	50 cc.	100 cc.	200 cc.
Each.....	\$1 90	2 50	4 00

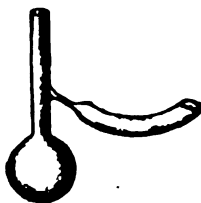
REMEMBER OUR DISCOUNT.



5315



5312



5308



5308/1



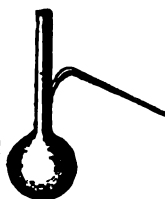
5326



5325



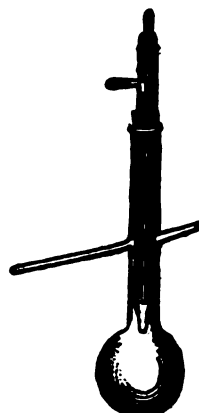
5320



5309/1



5309



5307

I 5313—Flasks, with two marks around the neck, (in and out), best German make. (Liter Bottles.)

10	25	50	100	200	250	300	500	1000	2000 cc.
\$0 30	40	50	55	65	75	90	1 05	1 25	1 60

I 5314—Ditto, ditto, with glass stopper.

10	25	50	100	200	250	300	500	1000	2000 cc.
\$0 40	45	60	65	80	1 00	1 10	1 25	1 45	1 85

\*5315—Ditto, with one mark around the neck (Liter Bottles), best German.

10	25	50	100	200	250	300	500	1000	2000 cc.
\$0 15	25	31	37	44	50	62	75	94	1 25

\*5320—Ditto, ditto, glass-stoppered.

10	25	50	100	200	250	300	500	1000	2000 cc.
\$0 25	30	37	44	55	75	80	94	1 08	1 50

\*5325—Ditto, ditto, according to Kohlrausch; neck narrow at the mark, and wide above, for saccharimetric polarization, 100 cc. \$0 55

\*5326—Flasks, volumetric, (Shaking Flasks), heavy, graduated, with glass stopper.

500	1000 cc.
\$0 94	1 25

- \*5330—Flasks, with two marks around the neck, called "Sugar Flasks."  
 50 and 55 cc. 100 and 110 cc. 200 and 220 cc.  
 \$0 37 50 75

- \*5331—Flasks, with graduated neck, with stopper.

Mark at.....	100	250	500	1000 cc.
Graduated.....	10 in $\frac{1}{4}$	25 in $\frac{1}{2}$	25 in $\frac{1}{4}$	50 in $\frac{1}{2}$
	\$1 00	1 35	1 50	2 00

- \*5332—Ditto, ditto, without stopper. Graduation of neck from — 5 to + 10 cc., divided in  $\frac{1}{4}$ . 0 mark = 100 cc., — 5 mark = 95 cc., + 10 cc. mark = 110 cc. Each.....

\$ 0 04

- \*5334—Flasks, Elutriating, Beningsen's, graduated. Each.....

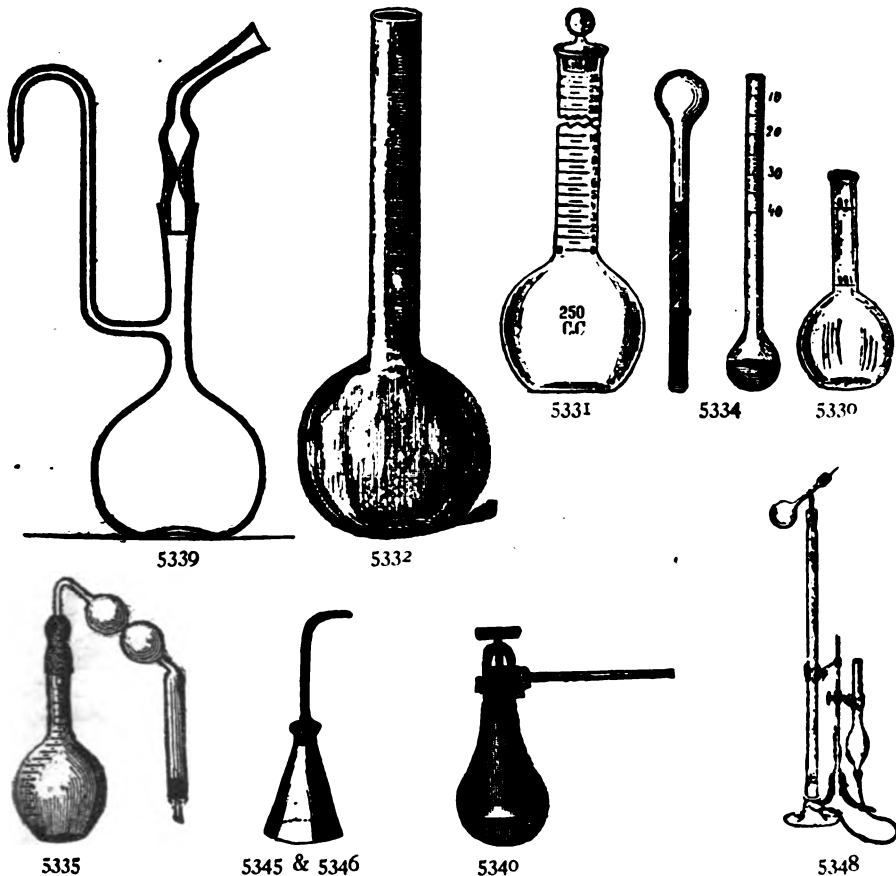
1 85

- \*5335—Flasks, for measuring the volume of gases, according to Bunsen.....

2 50

- \*5339—Flasks, according to Hogarth, used in iron analysis for determining the specific gravity of iron ores.....

2 50



APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*5340—Flasks, of copper, for making oxygen, with brass delivery tube and loose head, ground and fastened with clamp.

Approximate Capacity	250 cc.	500 cc.	1 lit.	2 lit.
	\$ 2 25	2 50	3 10	3 75

- \*5345—Ditto, of sheet iron, for making oxygen, with brass head and connections; secure against any serious accident; will make 150 liters of oxygen in one charge.....

2 65

- \*5346—Ditto, ditto, of copper.....

5 00

For other Oxygen Apparatus, see also No. 2250, etc.

- \*5348—Fluorometer, Oettel's, for volumetric estimation of Fluorine. (Fresenius' Zeitschrift 1886, p. 505.); glass parts, \$7 90; with support.....

9 45

- 5350—Foil, Aluminium.

Heavy sheet.

Very thin foil.

Per Hecto

\$ 0 60

1 75

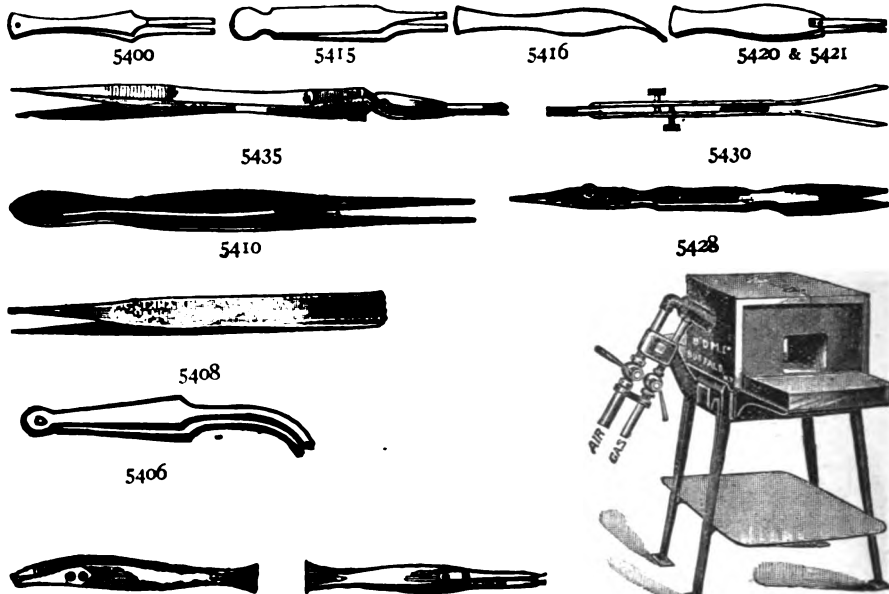
- 5355—Ditto, Copper, pure; per Hecto, \$0 40; per Kilo.....

2 20

- 5356—Ditto, ditto, heavy; per Kilo.....

2 05

5357—Foil, Copper, chemically pure, very thin, bright and smooth; per Hecto \$0 95; per Kilo .....	\$ 5 40
5360—Ditto, Gold, very thin and pure; per book .....	80
5362—Foil, Nickel. Per Hecto \$0 75. Per Kilo .....	5 75
5365—Ditto, Platinum, best French; heavy, medium, fine and extra fine. At lowest market price.	
5370—Ditto, Silver, very thin leaf; per book .....	27
5371—Ditto, Silver, pure; per Deca \$0 70; per Hecto .....	5 90
5375—Ditto, Dutch Gold, very thin leaf; per book .....	16
5380—Ditto, Tin. Thin. Med. Heavy. Per Kilo \$ 1.08 1 00 91 Per Hecto .....	20
5385—Ditto, ditto, very pure and thin; per Hecto 35cts; per Kilo .....	2 65
5390—Ditto, ditto, very pure, rough on one side; per Hecto 75cts; per Kilo .....	5 60
<b>Forceps for microscopic use. See also No. 7077/491, etc.</b>	
*5400—Forceps, of steel, plain, 9cm. 10 & 11cm. 12cm. 15cm. long. Each \$0 11 13 1/4 20 27	
Per doz. 1 20 1 50 2 25 3 00	
*5406—Ditto, brass, nickel-plated, bent, beautiful, strong forceps, 15 cm. long	65
5407—Ditto, ditto, with platinum tips (fig. 5406) .....	5 25
*5408—Ditto, ditto, polished, with fine points; each .....	31



*5410—Forceps, steel, highly finished, for assayers' use, Freiberg style	1 00
*5415—Ditto, brass, plain, stout; small, 25cts; large .....	33
*5416—Ditto, brass, curved, nickel-plated .....	30
*5420—Ditto, brass, strong, finely finished .....	60
*5421—Ditto, brass, strong, finely finished, nickel-plated .....	70
*5425—Ditto, brass, highly finished, with ivory points .....	75
*5426—Ditto, brass, highly finished, with bent ivory points .....	80
*5428—Ditto, brass, double, Plattner's, same as No. 5430, but without platinum points .....	75
5429—Ditto, ditto, with ivory points on one end (see fig. 5430) .....	1 75
*5430—Ditto, steel, nickel-plated, with platinum points, Plattner's .....	2 65
*5435—Ditto, steel, nickel-plated, with heavy platinum points, French style .....	3 35
*5436/1—Forge; Fletcher's Cyclone Tool Forge, No. 19. Invaluable for small forgings.	
No. 19 Cyclone Tool Forge .....	16 65
Fletcher's Foot-Blower, No. 10 B. .....	13 30
Root's Power Blower, X B. S. .....	33 30
Rubber Tubing, 13mm., for gas and air connections; per foot .....	35

**OTHER FORGES FURNISHED AT LOWEST PRICES!**

REMEMBER OUR DISCOUNT.



\*5438—Fork, of wood, fitting in support-table base No. 9025, and fork supports No. 9000.

	30 cm.	38 cm.	50 cm.
Each	\$0 37	50	62

\*5440—Form, for paper cylinder..... \$ 0 15

\*5470—Funnels, of light German Glass, 3 in a nest, very small, Plattner's; nest..... 25

5471—Ditto, of light glass, small, with long capillary tube for filling eudiometers, etc., with mercury..... 35

5472—Ditto, ditto, with glass stop-cock..... 1 85

5473—Funnels, glass (regular druggists' funnels), similar to No. 5475.  
Approximate Capacity 30 60 125 250 500cc. 1liter. 2liters. 4liters. 8liters.

Each	\$0 11	12	12½	17½	24	30	42	65	2 25
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\*5474—Funnels, glass, ribbed. 125cc. 250cc. 500cc. 1 liter. 2 liters. 4 liters.  
Each \$0 12½ 17½ 24 33 55 72

\*5474/1—Funnels, glass, best German, ribbed, angle of 60°, stem ground to a point.

	4 cm.	5 cm.	7 cm.	8 cm.	9 cm.	10 cm.
Each	\$0 12	15	18	23	26	30
Per doz	1 30	1 70	2 10	2 45	2 85	3 35

\*5475—Ditto, Glass, best German, angle of 60 degrees, stem ground to a point.

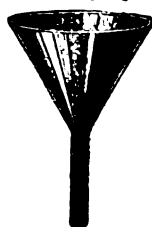
Diameter	4	5	7	8	9	10	13	16	18	20	23	25	30/31
Each	\$0 10	12½	15	19	22	25	31	37	50	62	75	1 00	1 70
Per doz.	1 15	1 45	1 75	2 20	2 50	2 85	3 60	4 40	5 85	7 35	8 85	11 50	20 25

5476—Ditto, ditto, without stem, for sugar analysis;

Diameter	8 cm.	9 cm.
Each	\$0 22	27
Per doz	\$2 50	3 10



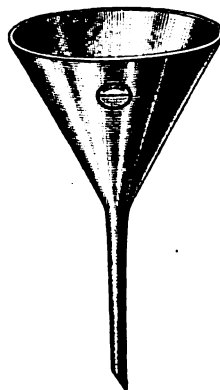
5480

5474  
& 5474/1

5475



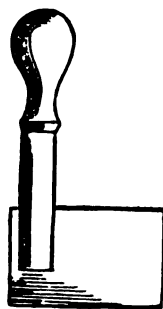
5480/1



5480/1



5438



5440



5470

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*5480—Ditto, glass, best Bohemian make, angle of 60 degrees, with ground edges, polished, the best funnels for analytical work.

Diameter	3	4	6	7	8	9	11	12	13	16	19	21	23cm.
Each	\$0 12	15	20	22½	27	33	40	50	60	72	87	1 20	1 55

\*5480/1—FUNNELS, OF HENRY HEIL CHEMICAL Co.'s BOHEMIAN NORMAL GLASS; exact angle of 60°, with polished edges, stem ground to a point. Superior in shape and quality to any other funnels. Each funnel bears our trade-mark.

(For note on H. H. C. Co's Bohemian Normal Glass see Preface).

Approximate Diameter	3	4	6	7	8	9	11	12	13	16	19	21	23cm.
Each	\$0 15	17	26	29	37	43	47	57	72	99	1 19	1 80	2 10

\*5481/1—**Funnels, of best German glass, angle of 60 degrees, with ground edges; with thin long stems ground to a point; known as Bunsen's Funnels.**

Diameter	3cm.	4cm.	6cm.	7cm.	8cm.	9cm.	11cm.	12cm.	13cm.	16cm.
Each	\$0 12½	15	18	23	27	30	37	45	56	62
Per doz.	1 45	1 70	2 00	2 55	3 00	3 50	4 25	5 25	6 40	7 00

\*5482—Ditto, ditto, with covers.

	12 cm.	13 cm.
Each	\$2 30	2 50

\*5485—Ditto, **of best Bohemian glass, finest finish, with accurately ground glass stop-cock, for separating liquids, and ground edges.**

Diameter	10.5cm.	13cm.	16cm.	18cm.	21cm.	26 cm.
Each	\$1 75	2 50	3 00	3 40	3 75	5 00

\*5490—Ditto, ditto, ditto, with covers.

	12cm.	13cm.	diameter.
Each	\$4 45	4 60	

\*5491—**Funnels, to suspend over dishes, with tubulature for the discharge of the distilled water, according to Victor Meyer.**

	21cm.	26cm.
	\$1 50	2 50

\*5495—**Funnels, of glass, globe-shape, heavy glass, with ground glass stop-cock, for separating liquids (for small size see No. 5585).**

	250 cc.	500 cc.	1 lit.	2 lit.	4 lit.
\$	1 75	2 50	3 45	3 75	5 25

REMEMBER OUR DISCOUNT.



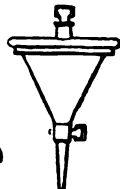
5496



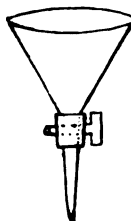
5495



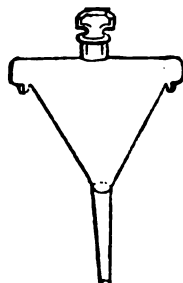
5491



5490



5485



5482



5497



5481/1



5500



5499

\*5496—Ditto, of glass, **cylindrical, with ground glass stop-cock, and with glass stopper, as the preceding. A good funnel for displacements.**

	250 cc.	500 cc.	1 lit.	2 lit.	4 lit.
\$	1 85	2 50	2 80	3 45	5 00

\*5497—Ditto, ditto, with side tubulature, as used for Guibourg's Displacement Apparatus, No. 1560.

	300 cc.	540 cc.	1 lit.	2 lit.	3.5 lit.
\$	2 20	2 40	3 00	3 35	4 75

\*5498—Ditto, **Separatory, of glass, cylindrical form, stoppered and graduated, for Bromine, etc.**

Capacity	20cc.	50 cc.	100cc.
\$	2 65	3 35	4 00

\*5499—Ditto, **Separatory, Squibb's, with stop-cock.**

Capacity,	125 cc.	250 cc.	500 cc.
Each	\$ 1 55	2 50	3 50

\*5500—Ditto, **Separatory, with ground rod and large opening, as used in the manufacture of nitroglycerine.**

	4 lit.	8 lit.	12 lit.
\$	3 35	4 65	7 25

\*5501—Ditto, ditto, with ground rod, according to Hare.

	8 cm.	10 cm.	13 cm.	15 cm.
\$	0 62	0 75	0 87	1 10

5504—**Funnels, of platinum, cylindrical shape. At lowest market price.** In ordering, please state dimensions desired.

\*5505—**Funnels**, of Berlin porcelain, with handle, angle of 60 degrees.

No.	0	1	2	3	4	5
Diameter	9cm.	11cm.	12.5cm.	14.5cm.	17cm.	20cm.
	\$ 0 45	53	80	1 05	1 20	1 60

\*5510—Ditto, of Berlin porcelain, with perforations, used for draining crystals.

No.	0	1	2	3	4	5	6
Diameter	9cm.	11cm.	12.5cm.	14cm.	16cm.	18.5cm.	21cm.
	\$0 70	80	1 00	1 15	1 70	2 00	2 25

\*5515—Ditto, ditto, with large holes, s. c. filtering-baskets.

No.	0	1	2	3	4
Diameter	12cm.	14cm.	15cm.	17cm.	20cm.
	\$0 95	1 15	1 50	1 85	2 25

\*5516—Ditto, of Berlin porcelain, with fixed perforated porcelain plate, **Hirsch's**.

Diameter	5cm.	7cm.	9cm.	11cm.	12.5cm.	14cm.	16cm.	23cm.	30cm.
Each	\$0 90	1 10	1 20	1 65	2 25	2 75	3 50	6 00	10 00

\*I 5517—**Funnels**, of Berlin porcelain, with fixed perforated porcelain plate, **Buechner's**.

Diameter	5cm.	6.5cm.	8cm.	10cm.	12.5cm.	15cm.	20cm.	25cm.	30cm.
Height of sides	3cm.	3.5cm.	4.5cm.	3cm.	4.5cm.	6cm.	8.2cm.	11cm.	12cm.
Each	\$0 80	1 00	1 25	1 50	2 00	2 50	3 00	9 00	18 00



5505



5510



5515



5517



5521



5527



5530 &amp; 5530/1



5526



5516

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*5521—Ditto, of **Hard Rubber**. 250 cc. 500 cc. 1 lit. 1.9 lit. 3.8 lit.  
\$0 60 0 75 1 10 2 30 4 60

5525—Ditto, of **tin**, fig. 5521. 125 cc. 250 cc. 500 cc. 1 lit. 1.9 lit. 3.8 lit.  
\$0 12 15 19 25 31 37

\*5526—**Funnels**, enameled like granite.

	125cc.	250cc.	500cc.	1 lit.	1.9 lit.	3.8 lit.
Each	\$0 39	44	53	67	90	1 19
Per doz.	4 25	4 75	5 75	7 25	9 75	13 00

\*5527—**Funnels**, enameled like granite.

	125cc.	250cc.	500cc.	1 lit.	1.9 lit.	3.8 lit.
Each	\$0 67	71	83	96	1 08	1 26
Per doz.	7 25	7 75	9 00	10 50	11 75	13 75

5528—Ditto, **Copper**, see fig. 5521.

Approximate Capacity	125cc.	250cc.	500cc.	1 lit.	2 lit.	3.8 lit.
	\$0 80	95	1 15	1 50	2 00	3 00

\*5530—Ditto, of **tin**, for hot filtrations, double walls, Plantamour's.

Without glass funnel,	13	15.8 cm. diameter.
Each	\$2 50	3 00

\*I 5530/1—Ditto, of **copper**, for hot filtration; single walls, Plantamour's;

without glass funnel,	13cm.	15.8cm.	18.5cm. diameter.
Each	\$3 00	3 85	4 25

\*5531—**Funnels, of heavy copper, with double walls, according to Dr. Koch, for hot filtrations, on legs.** Without glass funnel, 15 cm. diameter .....

\$ 7 50

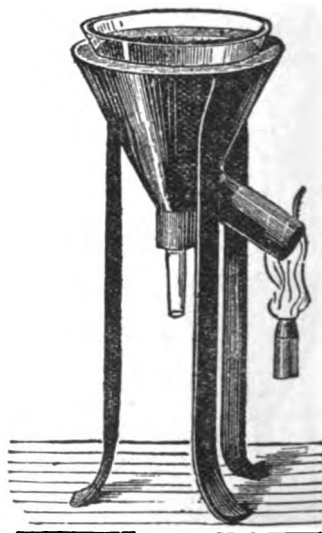
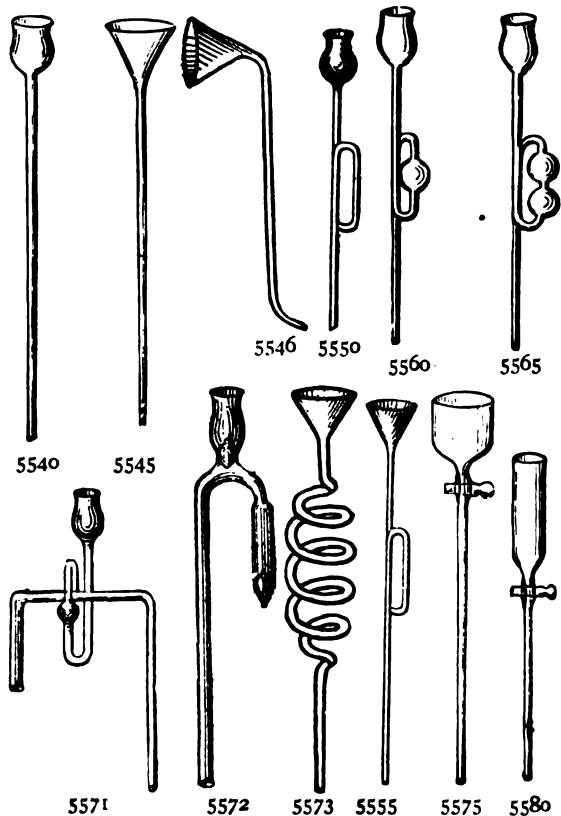
\*I 5532—**Ditto, of heavy copper, with single walls, according to Dr. Koch, for hot filtrations, on legs, 15.8 cm. diameter; without glass funnel** .....

5 00

\*I 5533—**Ditto, of tin, with single walls, according to Dr. Koch, for hot filtrations, on legs, 15.8 cm. diameter; without glass funnel** .....

3 85

5534—**Funnels of Aluminium, for hot filtrations, furnished to order in all sizes at lowest prices.**



5531, 5532 &amp; 5533

\*5540—**Funnel-tubes, with light thistle top.**

25cm.	30cm.	35cm.	40cm.	45cm.	50cm.	63cm.	76cm.
10	12½	14	17	19	25	31	37 cts.

\*5545—**Ditto, with heavy conical top.**

25cm.	30cm.	35cm.	40cm.	45cm.	50cm.	63cm.	76cm.
13	17	19	22	24	27½	34	40 cts.

\*5546—**Ditto, with bent tube, for filling retorts.**

Length	40cm.	50cm.	60cm.
Diameter of funnel	5cm.	7cm.	8cm.
	25	30	44 cts.

\*5550—**Ditto, with thistle top, bent (safety-tubes)** .....

25

\*5555—**Ditto, with conical top, bent (safety-tubes)** .....

25

\*5560—**Ditto, bent, with one bulb (safety-tubes)** .....

30

\*5565—**Ditto, bent, with two bulbs (safety-tubes)** .....

35

\*5570—**Ditto, bent, with three bulbs (safety-tubes)** .....

40

\*5571—**Ditto, (safety-tubes), Welter's** .....

70

\*5572—**Ditto, (safety-tubes), with 2 valves; small, 65 cts.; large** .....

1 10

\*5573—**Ditto, with spiral** .....

70

\*5575—**Funnel-tubes, with ground Geissler's stop-cock, bell-shaped.**

60cm. ccl.

125 cm. ccl.

\$1 10

1 25

REMEMBER OUR DISCOUNT.

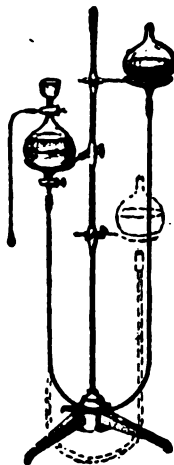
- \*5580—**Funnel-tubes**, with ground Geissler's stop-cock, cylindrical.  
(Illustr. p. 249).  
60cm. cc. 125cm. cc. 250cm. cc.  
\$1 10 1 40 1 75
- \*5585—Ditto, ditto, globe-shaped, with ground glass stopper on top; capacity, about 60 cc. \$ 1 50
- \*5585/1—**Funnel-tubes, Separatory, Walter's**, for examining single drops; capacity, about 60 cc.; each 1 85
- \*5586—**Funnel**, according to Dr. E. Drexel. Separatory Funnel, with two stop-cocks, reservoir and rubber tubing. Capacity, 250 500 1000cc.  
Without support \$6 65 7 60 9 50  
With support 8 15 9 10 11 00



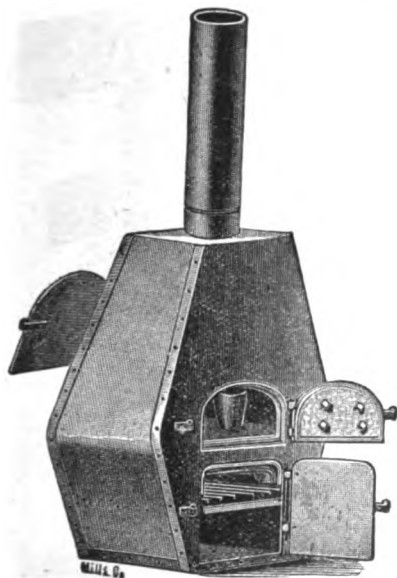
5585



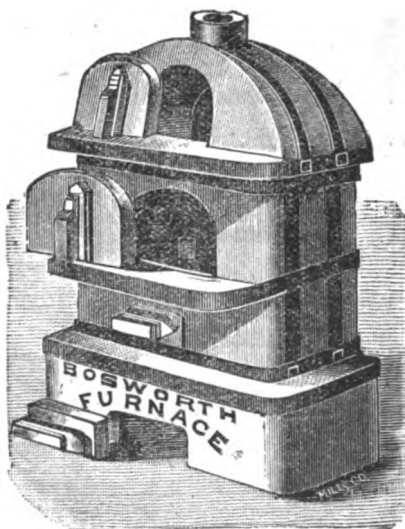
5585/1



5586



5587



5588

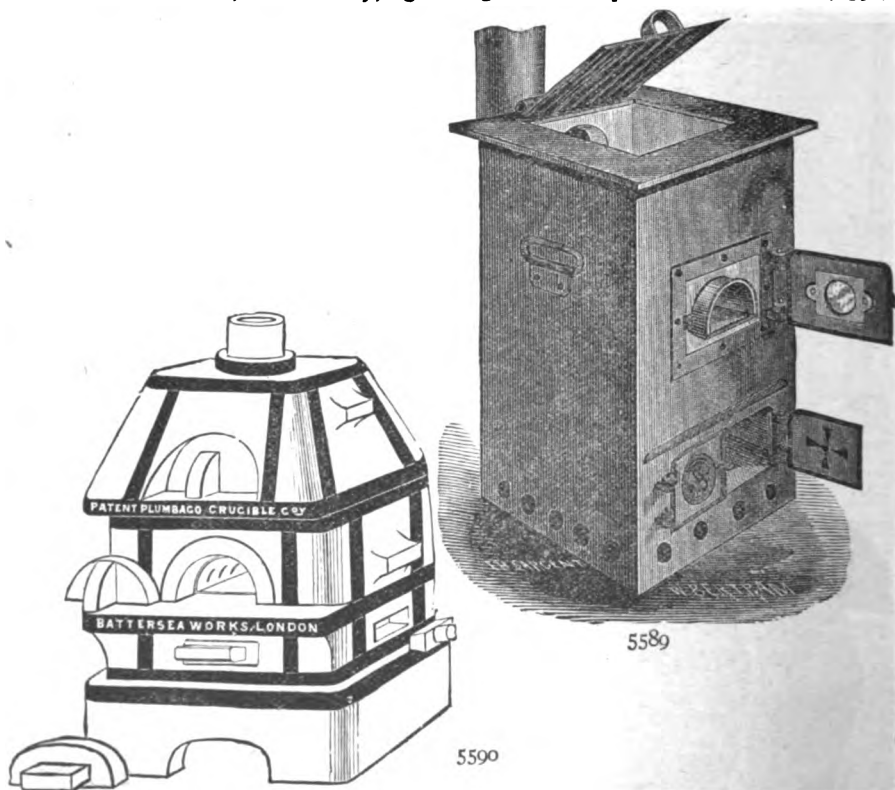
- \*5587—**Furnace, Assay, (Jackass Furnace)**, of fire-clay, bound with steel, asbestos lined doors; a very good portable assay furnace.  
Weight, 45 kilos. Uses muffle 305x153x102 mm. 33 30
- \*5588—**Furnace, Assay, Bosworth's**, of clay, in three sections; securely bound. Its construction is such, that it is less liable to crack than other furnaces, and it is more durable and convenient. For 220x382mm. LL muffle. Can be made so that 254x406 mm. muffle (NN) can be used, in which case, by aid of a ring, a 203x356 mm. muffle (KK) can also be used. Weight, packed, about 295 kilos. 65 00

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*5589—Furnace, Assay, Brown's Portable.** This furnace consists of a sheet-iron frame 84 cm. high, 35 cm. deep and 40 cm. wide, lined with fire-brick in sections, the interior being smooth and straight from top to bottom. The cover is cast-iron, and is ridged to lessen the danger of cracking. The muffle door is cast-iron, and is fitted with a circular opening, filled with mica, that the operations going on within the muffle may be seen when the door is closed. The draft doors are also of cast-iron, and are provided with wheel openings to further regulate the draft. The circular holes at bottom are in all four sides of the furnace, and serve to keep cool the true bottom of the furnace upon which the ashes fall. The muffle seen in the opening rests equally upon the fire-brick in front and in the rear of the furnace, leaving a space of 13 mm. between the end of the muffle and the brick to allow of the passage of fumes. The grate is formed of cast-iron bars, 25 cm. long, 2.5 cm. square, 6 in number, resting upon a cast-iron frame. The space below the true bottom is to be filled with fire-brick or sand or other material convenient. The chimney hole is 12.7 cm. in diameter, thus accommodating a stove-pipe of same dimensions. The furnace can take either 267x134x99 mm. (H) or 305x153x102 mm. (J) muffle, but is best adapted for size 305x153x102 mm. (J), the most commonly used muffle. **Entire weight of furnace, boxed, is 80 kilos.** Advantages: It can be used for muffle work and for crucible operations; accommodates a larger muffle for its size than any other furnace; its durability, light weight and cheapness..... \$ 33 30

REMEMBER OUR DISCOUNT.



**\*\*5590—Furnaces, Assay, Battersea,** of clay, iron bound, in three sections. It can also be used for enameling, etc. (Sectional View p. 245.)

	Height in mm.	Outside Diam- eter in mm.	Height in Inches.	Outside Diam- eter in Inches.	For Battersea Muffles.	
A	622	318	24.5	12.5	A, B, C, D.	22 67
B	641	337	25 25	13.25	B, C, D, E.	25 33
C	686	369	27	14.5	C, D, E, F, H.	32 00
D	724	394	28.5	15.5	D, E, F, G, H.	34 67
E	749	414	29 5	16.25	E, F, G, H.	39 00
F	762	445	30	17.5	F, G, H, J.	44 00
K	940	585	37	23	K, L, & LL.	90 13

Casks for No. 5590 charged extra!

**\*5591—Furnace, Assay. Battersea small Prospectors' Furnace, circular pattern.** A—Cover, lined Fire-clay. B—Chimney Collar. C—Muffle, 203x121x76 mm. D—Stopper for closing Muffle Aperture. E—Iron Shelf (detachable). F—Draught Opening. G—Sand-Bath. H—Muffle Door. J—Draught Door.

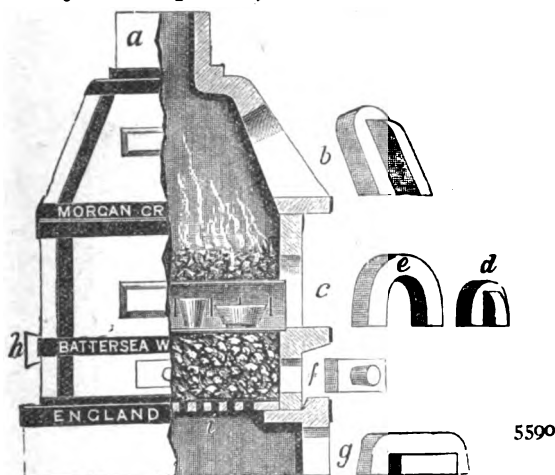
**This Furnace has been designed to meet in a simple, durable and portable form all the requirements of the Prospector.** It can be used for Muffle and Crucible Work, and accommodates either: Battersea Muffle C, 203x121x76 mm.—4 Battersea Round Crucibles E—3 Battersea Round Crucibles F—2 Battersea Round Crucibles G.

The Furnace is shown in the illustration fitted for muffle work; to adapt for crucibles, remove muffle C, and close aperture with clay stopper D. The Furnace consists of a solid clay lining with an outer casing of stout sheet-iron and removable fittings.

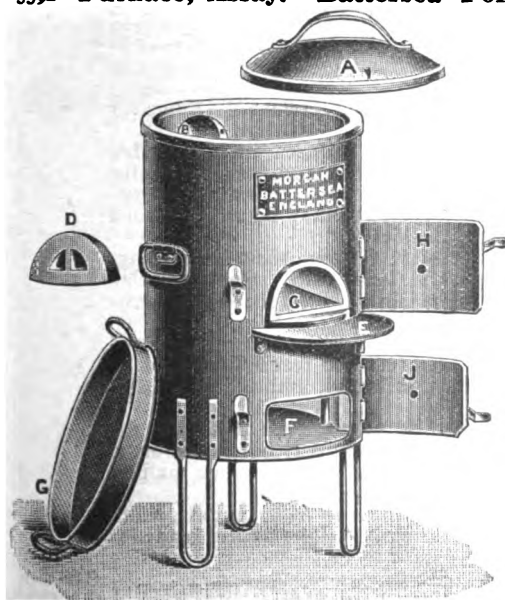
The total height of the Furnace is 66 cm., diameter 27 cm., diameter of Chimney Collar 12.7 cm.; total weight, complete 19 kilos; weight packed ready for shipment 38 kilos.

**Price without muffle** ..... **\$28 00**

**Packed, ready for shipment, with 1 muffle**..... **30 15**



**\*5592—Furnace, Assay. Battersea Portable Prospectors' Furnace.**



A—Fire-clay Cover; B—Stopper for Fire-clay Cover; C—Cast-iron Muffle Door; D—Frame for Muffle Door; E & F—Cast-iron Draught Doors; G—Frame for Draught Doors; H—Chimney Collar; J—Muffle 305x153x102 mm.; K—Fire-clay Slab to rest on projecting ends of Fire-bars; L & M—Mica Sight-hole and Plate; N—Plug for closing Muffle Aperture; O—Lifting Handles.

**This Furnace has been designed to meet in a simple, durable and portable form all the requirements of the Prospector.** It can be used for Muffle or Crucible Work, and accommodates Muffle J (305x153x102 mm.) or Battersea Round Crucible N.

The Furnace consists of strong fire-clay slabs with rebated edges, insuring tight joints, which are kept in position by top plate being screwed down. The casing is of stout sheet-iron with removable fittings.

(Continued p. 246.)

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 grm.

**5592—Furnace, Assay. Battersea Portable Prospectors' Furnace.**  
(Continued)

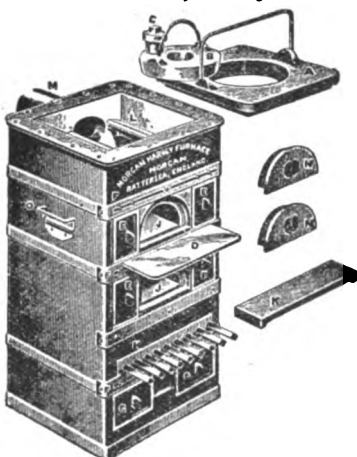
**For Assaying:** The muffle door C is provided with a mica sight-hole through which the contents of muffle can be watched. The slab K is supported by the projecting ends of the fire-bars, and forms a convenient shelf on which to place the scorifiers, etc.

**For Melting:** The Furnace can be used for crucibles by closing the muffle aperture with the clay stopper N, and the contents of the crucible can be inspected from time to time through the sight-hole A, thus obviating the necessity of removing the 'furnace cover.

The total height of the Furnace is 71.1 cm., depth back to front 35.5 cm., and width 40.6 cm., diameter of Chimney Collar 12.7 cm. Total weight of Furnace, complete 60 kilos; weight packed ready for shipment 110 kilos.

The Grate consisting of nine wrought-iron bars fitted diagonally into a cast-iron frame can readily be removed or cleaned. The cover is of fire-clay, iron bound, with falling handle to economize space in packing.

**Price without muffle** ..... **\$47 00**  
**Packed, ready for shipment, with 1 muffle** ..... **49 50**



5593

**\*5593—Furnace, Assay. Morgan-Harvey Double Muffle Furnace,** for melting, assaying, etc. A—Fire-clay cover; B—Stoking Cover, fitting into A Cover; C—Sight Stopper for same; D—Cast-iron movable Shelf; E—Cast-iron Muffle Doors; F—Door Frames; G—Cast-iron Draught Doors; H—Frame for Fire Bars; J—Muffle, 305x153x102 mm.; K—Fire-clay slab to rest on projecting ends of Fire Bars; L—Fire-clay Deflectors; M—Cast-iron Chimney Collar; N—Plugs for closing Muffle Apertures; O—Lifting Handles.

This Furnace has been designed to meet in a simple, durable and portable form all the requirements of the Assayer. It can be used for Muffle or Crucible Work and accommodates two Battersea Muffles J (305x153x102 mm.), Battersea Round Crucible P, or a number of smaller crucibles.

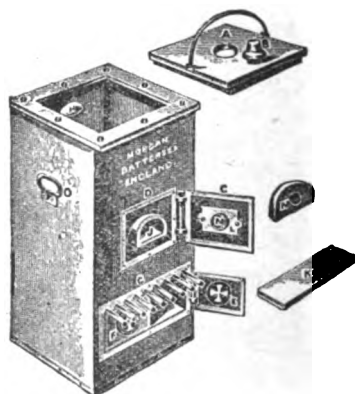
The Morgan-Harvey Furnace consists of stout sheet-iron casing, with cast-iron and fire-clay fittings, and lined with strong fire-clay slabs with rebated edges, insuring tight joints, which are kept in position by the top plate being screwed down.

The grate of the Furnace consists of nine wrought-iron bars fitted diagonally into a cast-iron frame, and can be readily removed or cleaned. The Covers are of fire-clay, iron bound, with falling handles to economize space in packing.

When used as a Muffle Furnace it is so arranged that while the lower muffle is used for scorification, cupellation may be carried on in the upper. To adapt the Furnace for fusion work remove muffles, block apertures with stoppers, and close doors.

The total height is 82.5 cm., depth, back to front 42 cm., width 42 cm., diameter of Chimney Collar 12.7 cm. Weight packed ready for shipment, 155 kilos.

**Price without muffle** ..... **60 00**  
**Packed, ready for shipment, with 2 muffles** ..... **64 00**



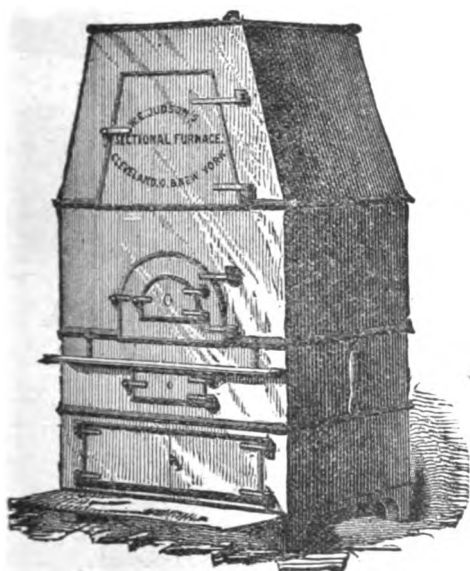
5592

**REMEMBER OUR DISCOUNT.**

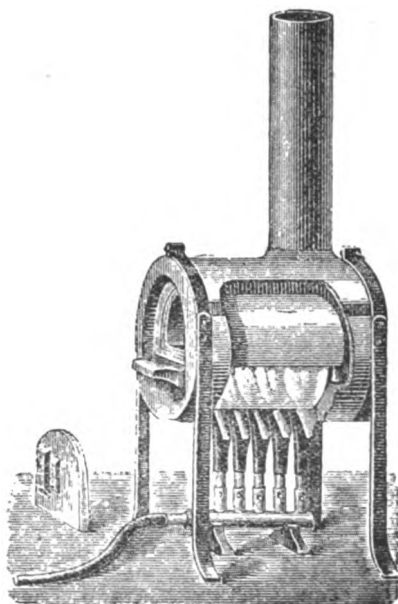


\*5635—**Furnace, Assay, Judson's Sectional, No. 1.** This furnace is the result of the long experience, as a practical chemist, of the inventor, Mr. W. E. Judson, of Cleveland, O., and more fully meets the requirements of the case than anything heretofore offered to the profession. It is constructed in three sections, whereby the following advantages are secured: The risk of cracking, by unequal expansion and contraction, is much diminished; without sacrificing anything in strength, the gross weight is considerably reduced, and the furnace is rendered very portable. The grate is a revolving one. The convenience of this in removing ashes and clinkers is too evident to need comment. The muffle-doors and the door for feeding and crucible operations are large. There is a muffle-door in both front and back, so that a muffle open at both ends can be used. The ordinary muffle, closed at the back, can also be used as with any other furnace. The doors have small holes in them, through which the reactions going on within the muffle may be watched without injury, either to the operation or the operator. Height 92 cm. width 46 cm. depth 33 cm.; size of muffle 305x153x102 mm. (J). With set of concentric rings for the top to use with sand-baths. Weight packed about 200 kilos.

\$ 75 00



5635



5638

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 gra.

5636—**Ditto, Assay, Judson's Sectional, No. 2.** Same essential features as above. The muffle-door is provided with a smaller door, to be used in cupelling, etc., to prevent the entrance of large drafts of cold air. Height 107 cm., diameter 56 cm., depth 40 cm.; size of muffle, 382x229x153 mm. (LL). No concentric rings with this size. Weight packed about 295 kilos.

100 00

\*5638—**Furnace, Muffle, according to Wiesnegg; for gas.** With 5 large Bunsen Burners with movable top attachment. It takes a muffle 152 mm. long, 102mm. wide and 63mm. high.

26 65

1 25

\*5640—**Furnace, Hoskins' patent hydro-carbon (for gasoline 74°),** consisting of:

**Blow-pipe with Tank No. 2, Crucible Furnace No. 1, taking Battersea crucible "U" or Colorado form crucible "B", and Muffle Furnace No. 2 for muffle "C", 203 mm. long by 121 mm. wide.** Weight packed, about 36 kilos. (Illustr. p. 248).

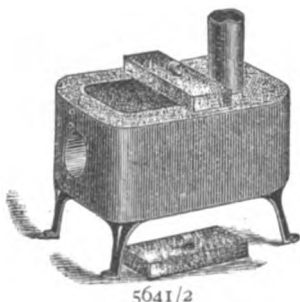
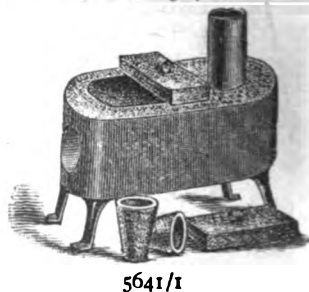
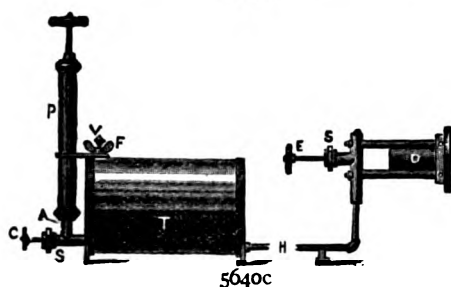
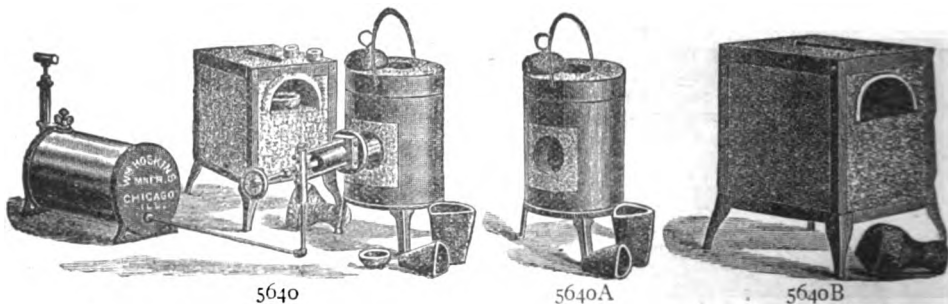
61 65

**Crucible Furnace No. 1, fig. 5640A; taking "U" or Colo. "B" Crucible. (Illustr. p. 248.)**

\$ 6 65

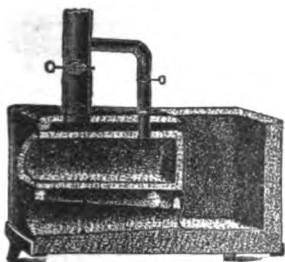
## \*\*5640—Furnace, Hoskins' (Continued).

Muffle Furnace No. 2, fig. 5640 B, taking "C" muffle, 203x121x76 mm	\$16 65	
Blow-pipe with 1.9 lit. tank No. 2, fig. 5640 C	38 35	
Crucible Furnace No. 2, fig. 5640 A, taking Battersea "K" crucible	\$ 8 30	
Muffle Furnace No. 3, fig. 5640 B, taking "F" muffle, 254x153x102 mm	25 00	\$ 76 60
Blow-pipe with 3.8 lit. tank No. 3, fig. 5640 C	43 30	
Extra Muffles "C"; each		92
Extra Muffles "F"; each		1 17
Extra Burners for blow-pipe with tank No. 2 and No. 3; each		10 00

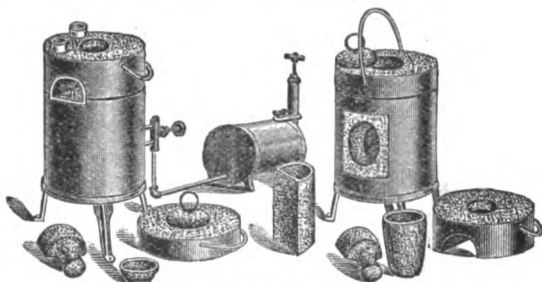


- \*5641/1—Furnace, Crucible, No. 3, Hoskins', for use with blow-pipe, long form, taking two Colorado form Crucibles B or equivalent sizes 11 65
- \*5641/2—Furnace, Crucible, No. 4, Hoskins', for use with blow-pipe, taking four No. 10 French crucibles or equivalent sizes 20 00
- 5641/3—Furnace, Crucible, Hoskins', for Bullion Melting, taking Battersea Q Crucible, 30.5 cm. high, 21.3 cm. diameter, or equivalent sizes. It requires two Blow-pipes No. 5640 C—No. 3—or Blow-pipe No. 5642/1—No. 4 41 65
- \*\*5641/4—Furnace, Combination, Hoskins', No. 5. It takes one crucible, 20 Grammes, or F, or equivalent size, and a muffle 153x90x64 mm., and measures 30.5 cm. in length, 21.6 cm. in width and 40.6 cm. in height. Weight complete 13.5 kilos; packed 18 kilos. (Sectional View p. 249) 16 65

- \*5641/5—**Furnace, Combination, Hoskins', No. 6.** It takes four crucibles, 20 Grammes, or F, or equivalent size, and muffle F 254x153x102 mm., and measures 52 cm. in length, 30.5 cm. in width and 48 cm. in height. Weight complete 43 kilos, packed 56 kilos. (Illustr. pp. 248 & 249) ..... \$ 33 30
- \*5641/6—**Furnace, Combination, Hoskins', No. 1.** On the right of the cut is shown the furnace prepared for crucible work. By lifting off the cover and substituting the part with the muffle opening and sliding in the muffle, the furnace is prepared as shown on the left. A scorification or two cupellations may be made in this furnace with perfect satisfaction. Weight complete is 11 kilos. The muffle is 153x90x64 mm. and the Crucible Furnace is the same as No. 5640 A—No. 1. Price of Combination Furnace..... 11 65  
Ditto with tank with pump No. 2, 1.9 lit..... 50 00  
Ditto with tank with pump No. 3, 3.8 lit..... 55 00
- \*5642—**Furnace, Muffle, Hoskins' No. 4,** taking muffles L— 382x229x153 mm high. This furnace is shipped in parts ready to put together and brick up, and requires two No. 3 Blow-pipes (No. 5640 C), or the No. 4 Blow-pipe (No. 5642/1). All special interior bricks and full directions furnished for setting and bricking up with common brick. This furnace may be raised to a good heat for scorifying or crucible work in the muffle in 30 minutes. Price including one muffle..... 41 65  
**Extra Muffles, each**..... 2 00



5641/4 &amp; 5



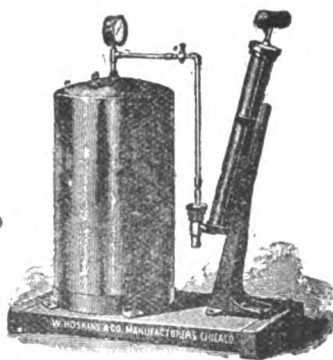
5641/6



5642



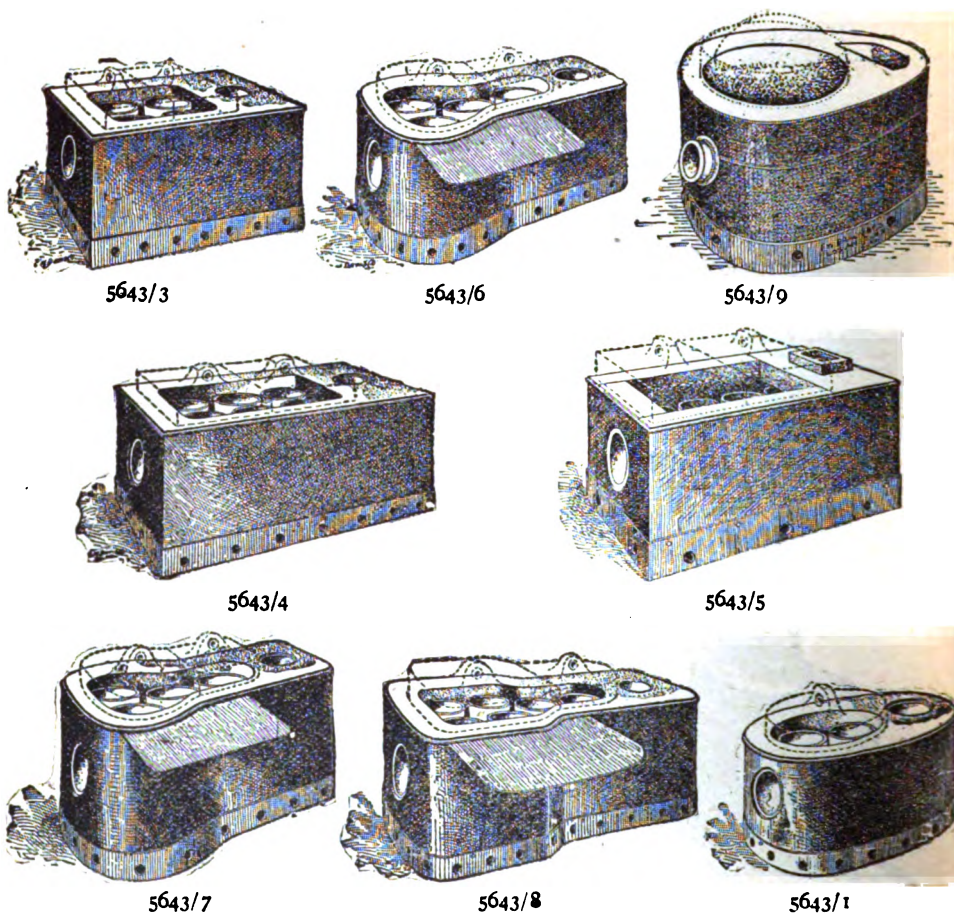
5642



5642/1

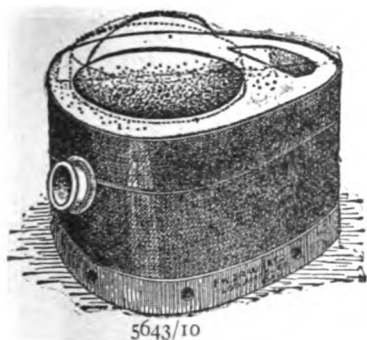
- \*5642/1—**Blow-pipe, with 19 lit. tank, Hoskins' No. 4,** made of heavy copper, with suitable pump, pressure gauge, ten feet of pipe, elbow, etc., with two burners complete. This tank is of very best workmanship and is especially designed for use with No. 4 Muffle Furnace (No. 5642), but will be found very convenient when large quantities or continuous work is required with any of the furnaces No. 5640 A, 5640 B and 5641/1-2-3-4 and 5 ..... 83 30
- \*5643/1—**Furnace (Braun's), Crucible, Oval No. 1, for use with Sunset or Cary Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners see No. 5643/50, etc.). It holds two 20-gramme crucibles. Exterior dimensions: Width 23 cm., length 38 cm., height 21.5 cm. Net weight 22 kilos, packed 26 kilos. (Illustr. p. 250). ..... 10 80
- \*5643/3—**Ditto, Square No. 3.** It holds four F crucibles. Exterior dimensions: Width 27 cm., length 35.5 cm., height 23 cm. Net weight 28 kilos, packed 35 kilos. (Illustr. p. 250.) ..... 16 65

- \*5643/4 **Furnace (Braun's), Crucible, Square No. 4.** It holds six F crucibles. Exterior dimensions: Width 28 cm., length 43 cm., height 23 cm. Net weight 37 kilos, packed 45 kilos ..... \$ 20 00
- \*5643/5—Ditto, **Square No. 5.** It holds eight 20-gramme crucibles. Exterior dimensions: Width 28 cm., length 43 cm., height 21.5 cm. Net weight 27 kilos, packed 36 kilos..... 22 50
- \*5643/6—Ditto, **Improved No. 6.** Will hold four 10-gramme crucibles. Exterior dimensions: Width 25.5 cm., length 42 cm., height 18 cm. Net weight 20 kilos, packed 27 kilos..... 15 00
- \*5643/7—Ditto, **Improved No. 7.** It holds four F crucibles. Exterior dimensions: Width 28 cm., length 43 cm., height 25.5 cm. Net weight 29 kilos, packed 34 kilos..... 20 00

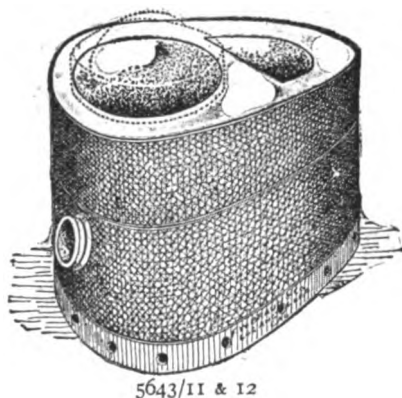


- \*5643/8—Ditto, **Improved No. 8.** It holds six F crucibles. Exterior dimensions: Width 28 cm., length 52 cm., height 22.25 cm. Net weight 36 kilos, packed 48 kilos..... 25 00
- \*5643/9—Furnace (Braun's), **Bullion Melting, No. 9, for use with Cary Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners see No. 5643/50, etc). Furnaces No. 5643/9, 10 and 11 may also be operated with "Sunset" Burner by placing a brick partly over the chimney hole, thus reducing the size of the outlet. It holds a black-lead crucible No. 7, with cover. Exterior dimensions: Width 23 cm., length 35.5 cm., height 28 cm. Inside dimensions of fire chamber: 15.25 cm. diameter, 19 cm. depth. Net weight 26 kilos, packed 34 kilos ..... 20 00  
 "Sunset" Burner will operate this size ..... 8 mm. "Cary" Burner is recommended.

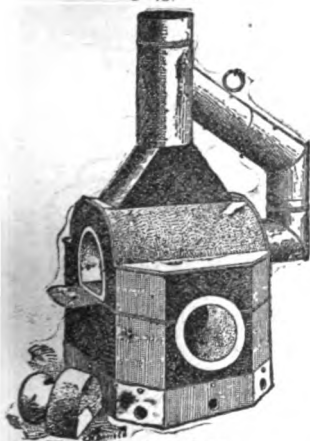
- \*5643/10—Furnace (Braun's), Crucible, No. 10. It holds a black-lead crucible No. 9, with cover. Exterior dimensions: Width 29 cm., length 43 cm., height 31.75 cm. Inside dimensions of fire chamber: 19 cm. diameter, 20.25 cm. depth. Net weight 45 kilos, packed 50 kilos.... \$ 23 30  
"Sunset" Burner will operate this size, but 44.5 mm. "Cary" Burner is recommended.
- \*5643/11—Ditto, No. 11. It holds a black-lead crucible No. 25, with cover. Exterior dimensions: Width 38 cm., length 53.5 cm., height 38 cm. Inside dimensions of fire chamber: 25.5 cm. diameter, 30.5 cm. depth. Net weight 70 kilos, packed 94 kilos..... 30 00  
"Sunset" Burner will operate this size, but 51 mm. "Cary" Burner is recommended.
- \*5643/12—Ditto, No. 12. It holds a black-lead crucible No. 40, with cover. Exterior dimensions: Width 45.75 cm., length 61 cm., height 49 cm. Inside dimensions of chamber 30.5 cm. diameter, 39.5 cm. depth. Net weight 122 kilos, packed 160 kilos..... 41 65  
57mm. "Cary" Burner is recommended for this size.



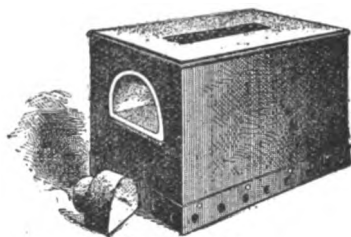
5643/10



5643/11 &amp; 12



5643/15-16-17



5643/18-19-20

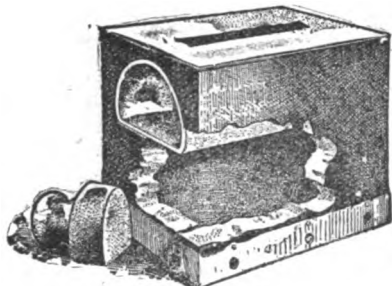
- \*5643/15—Furnace (Braun's), L. & C. Muffle, No. 15, for use with Sunset Gasoline Burner. (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners see No. 5643/50, etc.) Price includes one muffle. Size of muffle 203 x 121 x 76 mm. (Battersea C). Exterior dimensions (not including hood): Width 26.75 cm., length 25.5 cm., height 30.5 cm. Net weight 20 kilos; packed 27 kilos..... 17 50
- \*5643/16—Ditto, No. 16. Price includes one muffle. Size of muffle 254 x 153 x 102 mm. (Battersea F). Exterior dimensions (not including hood): Width 30.5 cm., length 30.5 cm., height 33 cm. Net weight 31 kilos; packed 45 kilos..... 25 00
- \*5643/17—Ditto, No. 17. Price includes one muffle. Size of muffle 305 x 178 x 114 mm. (12 x 7 x 4.5 inch). Exterior dimensions (not including hood): Width 38 cm., length 38 cm., height 39 cm. Net weight 45 kilos; packed 66 kilos..... 27 50

APPROXIMATE EQUIVALENTS:

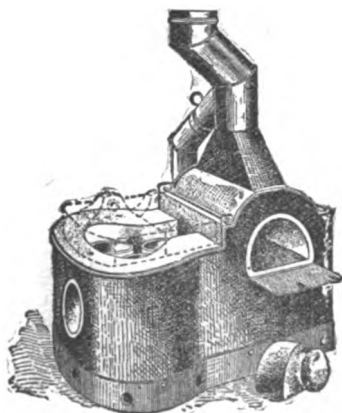
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



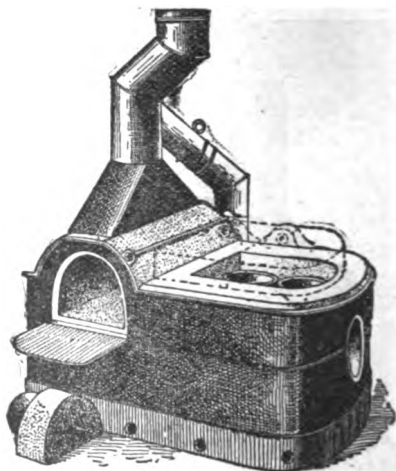
- \*5643/18—**Furnace (Braun's), Muffle No. 18, for use with Sunset or any size of Cary Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners see No. 5643/50, etc.) Price includes one muffle. Size of muffle 203 x 121 x 76 mm. (Battersea C). Exterior dimensions: Width 23 cm., length 30.5 cm., height 23 cm. Net weight 21 kilos; packed 25 kilos. (Illustr. p. 251.) ..... \$ 14 15
- \*5643/19—**Ditto, No. 19.** Price includes one muffle. Size of muffle 254 x 153 x 102 mm. (Battersea F). Exterior dimensions: Width 28 cm., length 35.5 cm., height 29 cm. Net weight 33 kilos; packed 41 kilos. (Illustr. p. 251.) ..... 20 00
- \*5643/20—**Ditto, No. 20.** Price includes one muffle. Size of muffle 305 x 153 x 102 mm. (Battersea J). Exterior dimensions: Width 28 cm., length 38 cm., height 29 cm. Net weight 36 kilos; packed 45 kilos. (Illustr. p. 251.) ..... 23 30
- \*5643/21—**Ditto, Special No. 21, with extra large combustion chamber below muffle.** Price includes one muffle. Size of muffle 305 x 153 x 102 mm. (Battersea J). Exterior dimensions: Width 26.75 cm., length 39.5 cm., height 35.5 cm. Net weight 34 kilos, packed 45 kilos. ..... 24 15



5643/21



3643/27

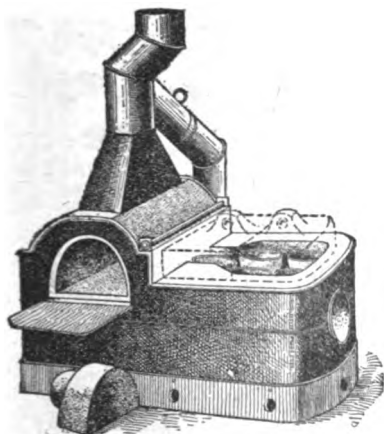


5643/25 and 26

- \*5643/25—**Furnace (Braun's), L. & C. Combination Muffle and Crucible, No. 25, for use with Sunset Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners see No. 5643/50, etc.) Price includes one muffle. Size of muffle 203 x 121 x 76 mm. (Battersea C). Size of crucible compartment: Width, 12.4 cm., length 16.5 cm., height 15.2 cm. It holds two G crucibles. Net weight 34 kilos, packed 45 kilos. .... 33 30
- \*5643/26—**Ditto, No. 26.** Price includes one muffle. Size of muffle 254 x 153 x 102 mm. (Battersea F). Size of crucible compartment: Width 17.75 cm., length 17.75 cm., height 17.75 cm. It holds four G crucibles. Net weight 50 kilos, packed 70 kilos. .... 37 50
- \*5643/27—**Ditto, No. 27.** Price includes one muffle. Size of muffle 203 x 121 x 76 mm. (Battersea C). Size of crucible compartment: Width 17.75 cm., length 17.75 cm.; height 15.25 cm. It holds three F crucibles. Net weight 49 kilos, packed 68 kilos. .... 37 50

REMEMBER OUR DISCOUNT.

- \*5643/28—**Furnace (Braun's), L. & C. Combination Muffle and Crucible, No. 28.** Price includes one muffle. Size of muffle 254x153x102 mm. (Battersea F). Size of crucible compartment: Width 19 cm., length 24 cm., height 15.25 cm. It holds five F crucibles. Net weight 61 kilos, packed 80 kilos..... \$ 41 65
- \*5643/30—**Furnace (Braun's), Cary Combination Muffle and Crucible, No. 30, for use with Cary Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners No. 5643/50, etc.) Price includes one muffle, one length plain stove pipe and one length stove pipe with damper. Size of muffle 254x153x102 mm. (Battersea F). Size of crucible compartment: Width 19 cm., length 17.75 cm., height 16.50 cm. It holds four F crucibles. Net weight 57 kilos, packed 80 kilos. This furnace requires a 44.5 or 51 mm. Cary Burner.. 41 65
- \*5643/31—**Ditto, No. 31.** Price includes one muffle, one length of plain stove pipe and one length of stove pipe with damper. Size of muffle 254x153x102 mm. (Battersea F). Size of crucible compartment: Width 24 cm., length 25.5 cm., height 20.25 cm. It holds six F crucibles. Net weight 99 kilos, packed 136 kilos. This furnace requires a 51 or 57 mm. Cary Burner..... 45 80

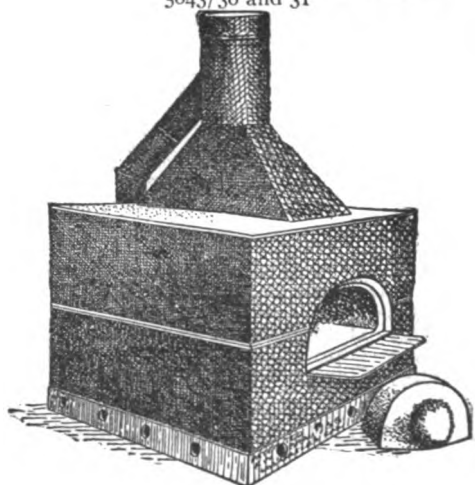


5643/28



5643/30 and 31

- \*5643/32—**Furnace (Braun's), Cary Muffle, No. 32, for use with Cary Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100, etc., and for Burners see 5643/50 etc.) Price of Nos. 5643/32, 33, 34 and 35 include one muffle, one length of plain stove pipe and one length of stove pipe with damper. Size of muffle 254x153x102 mm. (Battersea F). Net weight 67 kilos, packed 83 kilos. This furnace requires a 38 mm. Cary Burner..... 33 30



5643/32 to 35

- \*5643/33—**Ditto, No. 33.** Size of muffle 305x178x114 mm. (12x7x4 1/2 inches), which will hold eight 10-gramme crucibles closely set. Net weight 80 kilos, packed 95 kilos. This furnace requires a 44.5 mm. Cary Burner .. 37 50
- \*5643/34—**Ditto, No. 34.** Size of muffle 305x203x127 mm. (12x8x5 inches), which will take four 20-gramme crucibles. Net weight 98 kilos, packed 118 kilos. This furnace requires a 51 mm. Cary Burner..... 45 80
- \*5643/35—**Ditto, No. 35.** Size of muffle 406x254x171 mm. (16x10x6 1/2 inch), which will take five 30-gramme crucibles or eight 20-gramme crucibles. Net weight 150 kilos, packed 182 kilos. This furnace requires a 57 mm. Cary Burner..... 58 30

APPROXIMATE EQUIVALENTS:

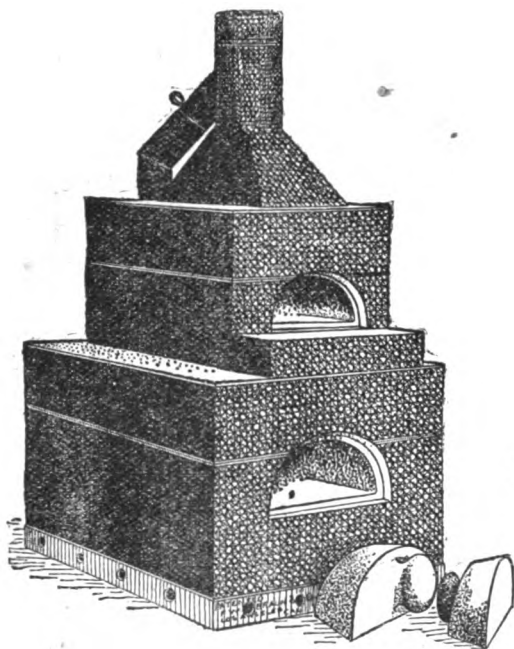
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*5643/36—**Furnace (Braun's), Cary Double Muffle, No. 36, for use with 51 mm. Cary Gasoline Burner.** (For Blow-pipe Outfits see No. 5643/100 etc., and for Burner see No. 5643/50, etc). Prices of Nos. 5643/36 and 37 include two muffles, one length of plain stove pipe and one length of stove pipe with damper. Size of upper muffle 254x153x102 mm. (Battersea F). Size of lower muffle 305x203x127 mm. (12x8x5 inch). The lower muffle holds four 20-gramme crucibles. Net weight 150 kilos, packed 170 kilos. 66 65
- \*5643/37—**Ditto, No. 37.** It requires a 57 mm. Cary Burner. Size of upper muffle 305x153x102 mm. (Battersea J). Size of lower muffle 466x254x171 mm. (16x10x6 3/4 inch). The lower muffle holds five 30-gramme crucibles or eight 20-gramme crucibles. Net weight 206 kilos, packed 263 kilos. 83 30

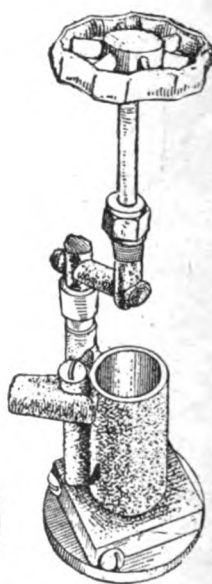
### HYDROCARBON BURNERS FOR No. 5643/1 TO 37.

- \*5643/50—**Sunset Hydrocarbon Burner.** For a low priced burner, this is a most satisfactory article. Made only in one size. 6 65

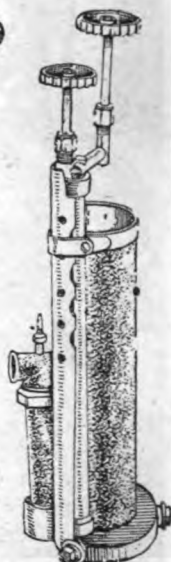
REMEMBER OUR DISCOUNT.



5643/36 and 37



5643/50



5643/51 to 55

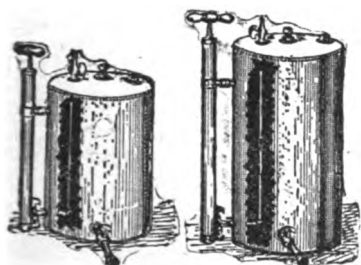
- \*5643/51—**Cary Hydrocarbon Burner, the best hydrocarbon burner made.**  
Diameter 32 mm. 16 65
- \*5643/52—Ditto, diameter 38 mm. 18 30
- \*5643/53—Ditto, diameter 44.5 mm. 20 00
- \*5643/54—Ditto, diameter 51 mm. 22 50
- \*5643/55—Ditto, diameter 57 mm. 25 00

### BLOW-PIPE OUTFITS FOR FURNACES No. 5643/1 TO 37. Burners are not included in prices!

- \*5643/100—Capacity 7.5 lit. Diameter 20 cm., height 30 cm. Net weight 8 kilos, packed 13 kilos. Made of heavy galvanized iron tested to a pressure of 75 lbs. (34 kilos) to the square inch. Complete with 4 ft. (120 cm.) 1/4 inch (6 mm.) iron pipe, and pump, without swivel joints. (Illustr. p. 255.) 20 00
- With pressure gauge 25 00
- \*5643/101—Capacity 17 lit. Diameter 24 cm. Height 43 cm. Net weight 13 kilos, packed 20 kilos. Made of heavy galvanized iron tested to a pressure of 75 lbs. (34 kilos) to the square inch. Complete with 4 ft. (120 cm.) 1/4 inch (6 mm.) iron pipe, and pump, without swivel joints. (Illustr. p. 255.) 21 65
- With pressure gauge 26 65

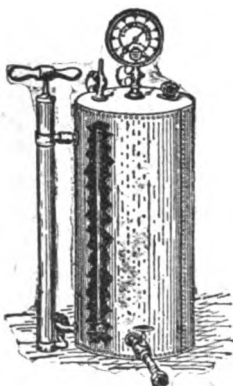


- \*5643/102—**Blow-pipe Outfits for furnaces No. 5643/1 to 37** (continued). Capacity 30 lit. Diameter 25.5 cm. Height 43 cm. Net weight 17 kilos, packed 27 kilos. Made of heavy galvanized iron tested to a pressure of 75 lbs. (34 kilos) to the square inch. Complete with 12 ft. (365 cm.)  $\frac{1}{4}$  inch, (6 mm.) iron pipe, pump and 2 swivel joints ..... \$ 25 00  
With pressure gauge ..... 30 00
- \*5643/103—Capacity 28 lit. Diameter 25.5 cm. Height 60 cm. Net weight 19 kilos, packed 23 kilos. Made of heavy galvanized iron, tested to a pressure of 100 lbs. (45 kilos) to the square inch. Complete with 12 ft. (365 cm.)  $\frac{1}{4}$  inch (6 mm.) iron pipe, 2 swivel joints, pump and pressure gauge ..... 30 00
- \*5643/103 $\frac{1}{2}$ —Capacity 38 lit. Diameter 30.5 cm. Height 51 cm. Net weight 27 kilos, packed 36 kilos. Made of heavy galvanized iron, tested to a pressure of 150 lbs. (68 kilos) to the square inch. Complete with 12 ft. (365 cm.)  $\frac{1}{4}$  inch (6 mm.) iron pipe, 2 swivel joints, pump and pressure gauge ..... 33 30

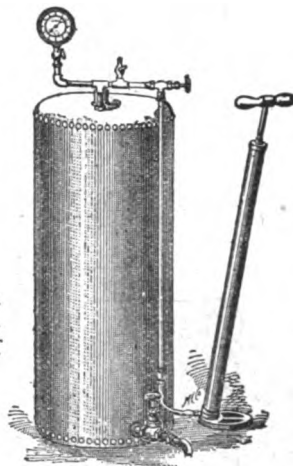


5643/100

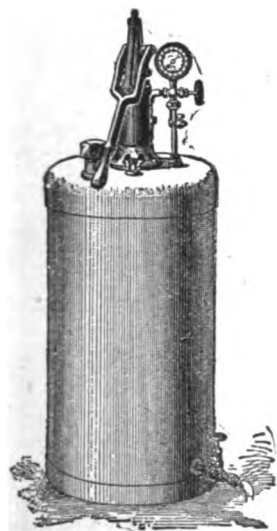
5643/101



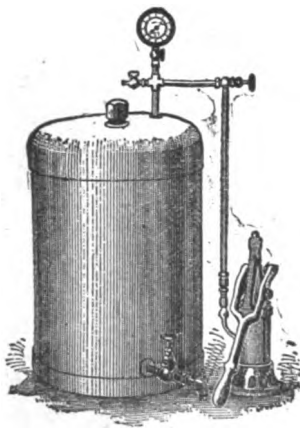
5643/102



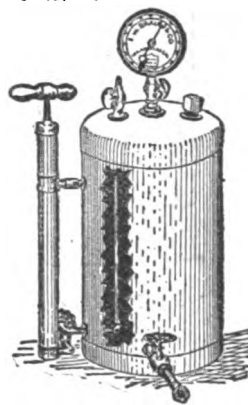
5643/103



5643/105



5643/104

5643/103 $\frac{1}{2}$ 

- \*5643/104—Capacity 38 lit. Diameter 30.5 cm. Height 51 cm. Net weight 28 kilos, packed 32 kilos. Made of heavy galvanized iron tested to a pressure of 150 lbs. (68 kilos) to the square inch. Complete with 12 ft. (365 cm.)  $\frac{1}{4}$  inch (6 mm.) iron pipe, 2 swivel joints, lever pump and brass pressure gauge ..... 36 65
- \*5643/105—Capacity 46 lit. Diameter 30.5 cm. Height 61 cm. Net weight 27 kilos, packed 38 kilos. Made of heavy galvanized iron tested to a pressure of 150 lbs. (68 kilos) to the square inch. Complete with 12 ft. (365 cm.)  $\frac{1}{4}$  inch (6 mm.) iron pipe, 2 swivel joints, lever pump and pressure gauge ..... 41 65

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*5643/106—**Blow-pipe Outfits for furnaces No. 5643/1 to 37** (continued.) Capacity 60 lit. Diameter 30.5 cm. Height 92 cm. Net weight 32 kilos, packed 36 kilos. Made of heavy galvanized iron tested to a pressure of 150 lbs. (68 kilos) to the square inch. Complete with 12 ft. (365 cm.)  $\frac{1}{4}$  inch (6mm.) iron pipe, 2 swivel joints, lever pump on stand and pressure gauge..... \$ 50 00

\*5645/1—**Furnace, Crucible, Gasoline, Turner's, No. 04.** The casing holds the heat so perfectly that the most refractory substance can be fused with ease. The crucible holds about 300 grms. of gold. The power which can be obtained from the blow-pipe is far beyond what is required for most purposes, and it is limited only by the fusibility of the crucible and casing.

**No. 0 Furnace, complete with blow-pipe, crucible and tongs**..... 15 80

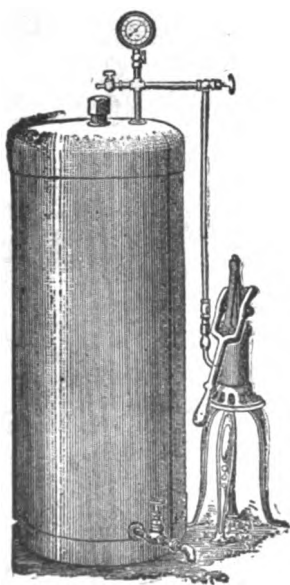
**No. 0 Furnace only**..... 5 00

**No. 4D Blow-pipe only**..... 10 00

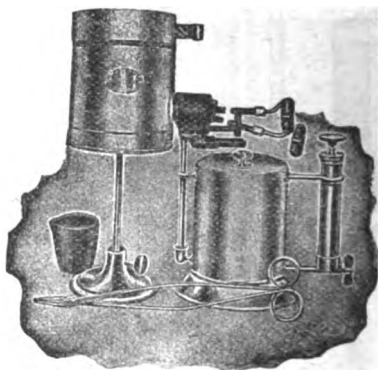
**Crucible only**..... 33

**Tongs only**..... 67

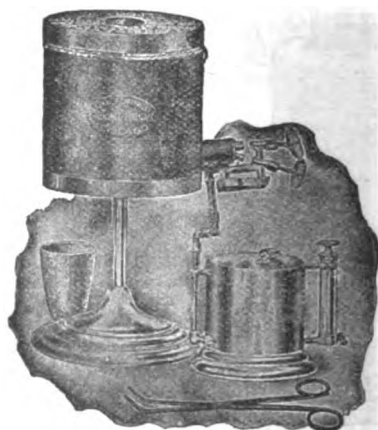
REMEMBER OUR DISCOUNT.



5643/106



5645/1



5645/2

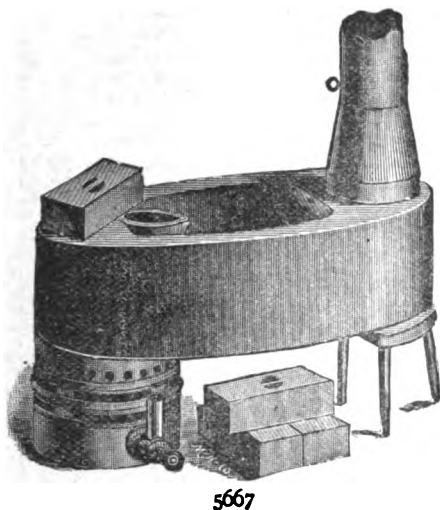
\*5645/2—**Furnace, Crucible, Gasoline, Turner's, No. 103.** This Crucible Furnace Outfit is of the same style as No. 5645/1, but the furnace is much larger and the blow-pipe burner is mounted on a compound swivel which permits turning the burner in almost any position, and is the most powerful generator of mechanical heat known. Substances which resist the ordinary method of reduction can be easily fused on account of the intense heat of the blow-pipe and special construction of the furnace. The crucible holds about 20 grms. Price of complete outfit..... 40 00

**\*I 5655—Furnace, of clay, Battersea, iron bound, for melting gold, silver, copper, etc..**

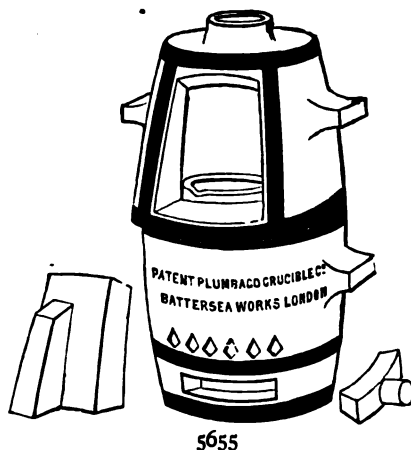
	A	B	C	D	E	F
Outside diameter in mm.....	235	248	280	349	369	457 mm.
Height in mm.....	445	508	559	660	712	813 mm.
Outside diameter in inches.....	9 $\frac{3}{4}$	9 $\frac{3}{4}$	11	13 $\frac{3}{4}$	14 $\frac{3}{4}$	18 in.
Height in inches.....	17 $\frac{1}{2}$	20	22	26	28	32 in.

\$11 67 13 54 15 86 21 46 25 20 39 20

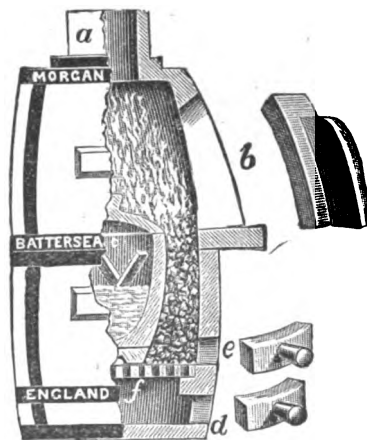
**Casks for No. 5655 charged extra!**



5667



5655



5655

**\*5667—Furnace, Assaying, Fletcher's**

Monitor No. 630. A new form of Gas Assaying Furnace, suggested by Walter Lee Brown, Chicago, Ill.

In this furnace the flame rises from the burner, shown at the left of the engraving, and passes horizontally through the body of the furnace to the chimney. Its form and mode of operation is somewhat similar to that of a reverberatory furnace, the movable bricks when in place forming the roof.

The exterior dimensions are 51 cm. long, 17.8 cm. wide, and 14 cm. deep. It will accommodate four 70-mm. scorifiers, or eight to ten cupels at once. The size of the floor is 25x9.8 cm. and the cavity is 9.2 cm. high, accommodating a No. 1 plumbago crucible. As there is no direct heat under the floor of the furnace, a platform is furnished on which scorifiers or cupels are placed. The heat passing under as well as over the platform, the articles placed thereon are heated quickly and evenly. The gas supply should come through a 13mm. tube from a tap at least 9.5 mm. clear bore, so that the gas will be delivered at full pressure. Proper connections should be made by means of small stove-pipe from the furnace to a chimney. The advantages are that it is possible to see every step and stage of the operation, and there is such perfect control of the heat that a higher or lower temperature, a reducing or oxidizing effect may be produced at any time as may be desired. It is noiseless. It is free from the annoyances of dust and ashes, and excessive heat in the room, and is especially desirable for summer use. Gas consumption, 0.85 Cbmtr. (30 ft.) per hour. One length of chimney pipe, with damper, crucible and tongs are included.

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

## \*5667—Furnace, Assaying, Fletcher's Monitor No. 630. (Continued.)

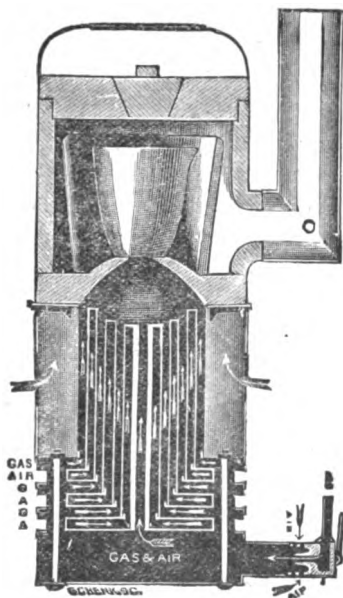
As represented in cut .....	\$ 28 50
Fire-Clay Slabs for covers, each .....	79
Body of Furnace .....	13 45
Platform .....	24
Supports for Platform, each .....	08
Tripod .....	79
No. 16 Burner .....	9 50
Chimney Pipe, per length .....	48

\*5668—Furnaces en suite, Fletcher's Assayers' Plant of Gas Furnaces. The illustration faithfully represents a group of gas assaying furnaces, designed by Walter Lee Brown for his own use in his laboratory. A full description of the plant appears in the second edition of his "Manual of Assaying: Gold, Silver, Copper and Lead Ores." The furnace at the left (No. 5685-No. 63) is for roasting sulphurets, etc., the centre one (No. 5670) is for crucible fusions, it taking a crucible (102 mm. deep by 95 mm. across), and the one at the right is the 'Monitor' No. 5667 furnace for scorification and cupellation.

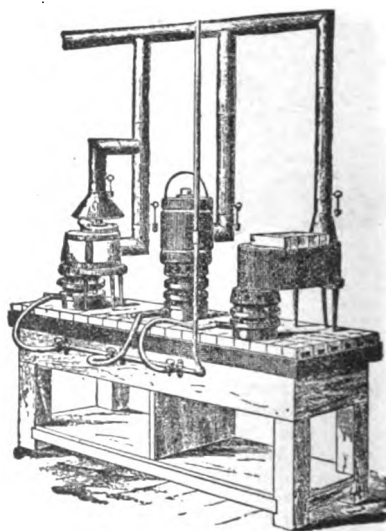
Assayers' Plant, three Furnaces, with Chimney Pipe, as illustrated  
Fire-brick covered Bench, extra .....

79 15  
39 60

REMEMBER OUR DISCOUNT.



5670



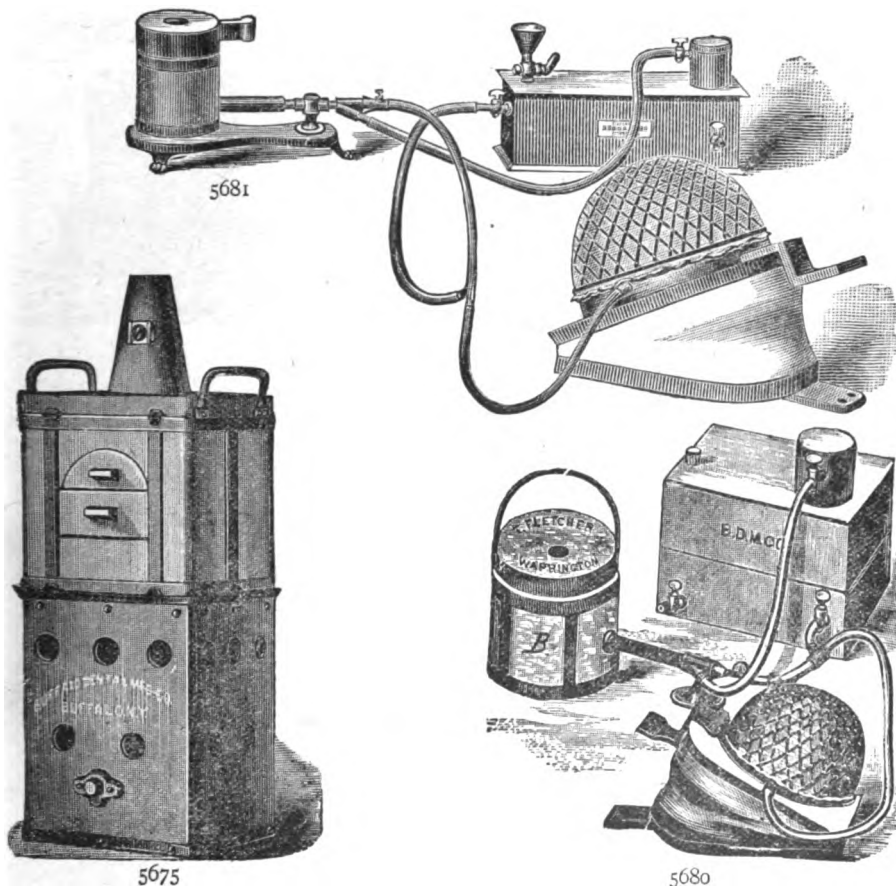
5668

\*5670—Furnace, Crucible, Fletcher's, No. 15. This will take crucibles up to 102 x 95 mm. and with 13 mm. gas-pipe, and a pressure of gas equal to 5 cm. of water, supplying about 1.4 Cbmtr. per hour, will melt 1.3 to 1.8 kilos of brass in about 30 minutes, and the same quantity of cast-iron in about 60 minutes from the time the gas is first lighted. It will melt a crucible full of silver or gold in 30 minutes. The crucible will hold and melt about 2.7 kilos when quite full. It is made in a very substantial manner, and is recommended as a first-rate furnace for manufacturing jewelers, reducing photographers' waste, etc. In using this pattern of furnace, the narrow end of the plumbago cylinder which surrounds the crucible is always put downwards. The use of this cylinder is to keep the flame in contact with the crucible up to the top. The flame is then deflected by striking against the lid and, turning downwards, leaves the furnace by the chimney at the lower side. The lid never gets very hot, and can be lifted away by the handle across the top; it is now made of the patent non-conducting material, in one piece, with an opening in the center for convenience in examining work. Complete .....

Plumbago Crucibles, No. 3, each .....	\$ 0 60	Grate .....	25 35
Plumbago Cylinders, each .....	2 04	Burner .....	1 60
Fire-Clay Casing .....	4 75	Burner Tubes, all sizes, each .....	12 65
Lid .....	1 60	Gauze Rings, each .....	40

**\*5675—Furnace, Muffle, Fletcher's.** For assaying, enameling, and all purposes where exact temperatures are required, not exceeding the fusing point of copper. The burners of these furnaces are of the same construction as the No. 5670. Chimneys 180 cm. high, Muffle, Dome and Crucible Tongs are included in prices.

Size No. 3. Inside Muffle space 76x102x63 mm. high. Requires 13 mm. bore gas-pipe .....	\$ 26 90
Size No. 4. Inside muffle space 98x127x76 mm. high. Requires 19 mm. clear bore gas-pipe .....	31 65
Size No. 5. Inside Muffle space 114x178x95 mm. high. Gas supply as No. 4 .....	47 50
Size No. 6. Inside muffle space 133x203x108 mm. high. Requires 25 mm. clear bore gas-pipe .....	71 25



**APPROXIMATE EQUIVALENTS:**

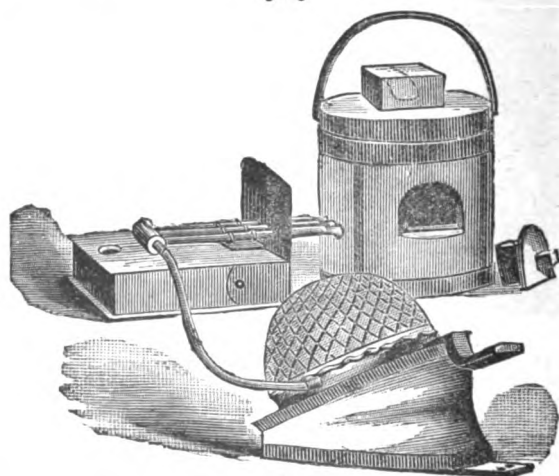
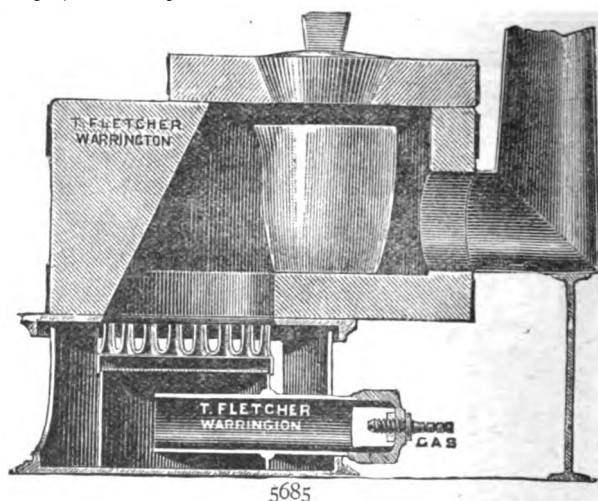
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*5680—Furnace and Gasoline Generator, Fletcher's, No. 44,** for high temperatures. The well-known Injector Gas Furnace, which in power, simplicity and convenience has not been approached by any other furnace, can now be supplied with a small, simple and safe arrangement for burning the vapor of the light petroleum or gasoline, giving a power and efficiency fully equal to that which can be obtained by a large gas supply. The arrangement is in every way as simple as when gas is used, requiring no more trouble or attention.

No. 44 Gasoline generator, capacity about 5.7 liters .....	23 75
Furnace No. 41, Blower No. 9A, Generator and Tubing complete, for use with gasoline gas .....	40 35
Furnace No. 41A, Blower No. 9B, Generator and Tubing complete .....	47 50

The engraving shows the No. 41A size Furnace, Generator and Blower No. 9B, as when in use

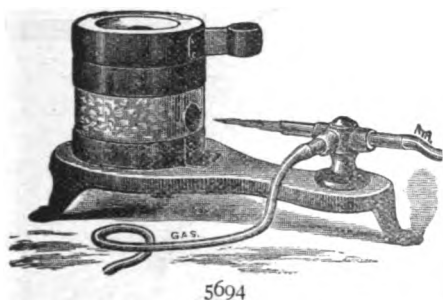
- \*5681—Furnace and Gasoline Generator, Fletcher's, No. 40C.** This consists of crucible furnace No. 5695 and a small size gasoline generator. It operates precisely like No. 5680. To those desiring a small furnace for high temperatures, where gas is not available, this one will be found particularly satisfactory. 74° gasoline must be used. (Illustr. p. 259.) Furnace, Generator, Blower No. 9A and tubing complete..... \$ 24 55  
 The Gasoline Generator alone, capacity about 1 liter..... 9 50  
 The Gasoline Generator, complete, with blower and tubing, but without Furnace ..... 19 00
- \*5685—Furnace, Crucible, Fletcher's, for brass foundries, jewelers and general purposes, for melting gold, silver, brass and copper.** Gas pipe required, for No. 63 9.5 mm. and for No. 63A 13 mm. These furnaces can be used for oxidizing in cupels or shallow dishes, instead of a muffle furnace. The lid does not require to be lifted; it can be pushed sideways sufficiently to enable the crucible to be lifted out.  
 No. 63 for No. 1 Crucibles..... 19 00  
 No. 63A, for No. 3 Crucibles ..... 22 20



- \*5690—Furnace, Fletcher's Perfected Injector, No. 241.** Combined Crucible and Muffle Furnace, for refined petroleum only. It is supplied with muffle fittings and can be used either as a crucible or muffle furnace. It accommodates a No. 3 Crucible, holding 2 7 kilos of metal. By reversing the cover, a No. 6 Crucible, holding 5.4 kilos of metal, may be used. The No. 10B Blower is recommended for this furnace. Size of muffle 89x70x165 mm. Price without blower..... 26 00  
 Furnace Body, Cover, Dome and Plug only..... 11 00  
 Extra Muffle, each..... 3 06

REMEMBER OUR DISCOUNT.

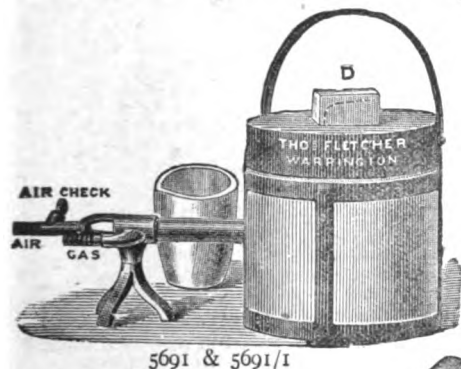
- \*5691—Furnace, Fletcher's Perfected Injector Gas Furnace, No. 41, for metallurgists, jewelers, chemists, manufacturers of artificial gems, iron and brass castings, etc., taking Crucible No. 1, capacity 0.9 kilo of copper; without blower ..... \$ 7 10  
 No. 10A Blower is recommended for this furnace.
- \*5691/1—Ditto, ditto, ditto, No. 41A, taking Crucible No. 3, capacity 2.7 kilos of copper. Without blower ..... 11 10  
 No. 10B Blower is recommended for this furnace.
- 5692—Ditto, ditto, No. 41E, for kerosene, taking No. 1 Crucible, with two burners. (See No. 5692/1). Without blower ..... 15 85  
 No. 10A Blower is recommended for this furnace.
- \*5692/1—Ditto, ditto, No. 41F, for kerosene, taking No. 3 Crucible, with three burners, without blower ..... 20 60  
 No. 10B Blower is recommended for No. 5692/1.



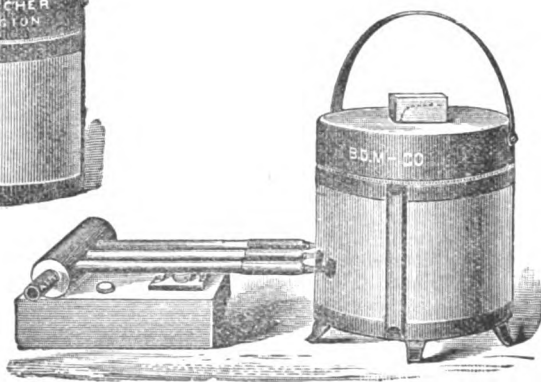
5694



5693



5691 &amp; 5691/1



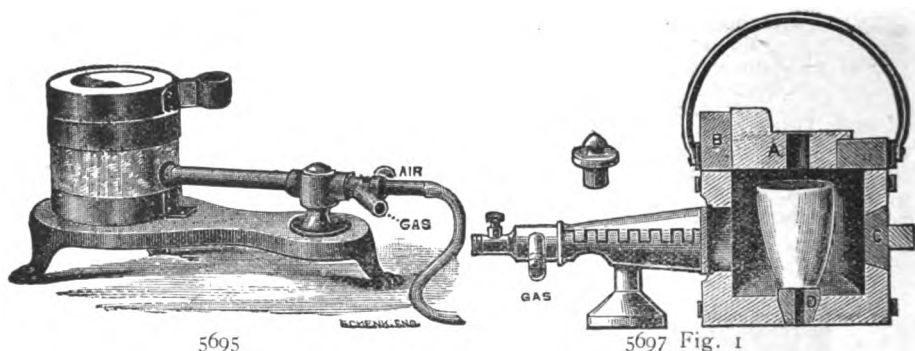
5692/1

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*5693—Ditto, Fletcher's Perfected Injector Combined Crucible and Muffle Furnace, No. 141, for gas, for No. 3 Crucible. By reversing the cover a No. 6 Crucible can be used. Size of muffle 89x70x165 mm. With Muffle and No. 3 Crucible. Without blower ..... 17 40  
 Extra Muffles, each ..... 3 06
- 5693/1—Ditto, ditto, ditto, No. 141A for gasoline, including generator and twelvefeet (9.5 mm.) Tubing. Without blower ..... 42 75  
 Extra Muffles, each ..... 3 06  
 No. 10B Blower is recommended for Nos. 5693 and 5693/1.
- \*5694—Furnace, Crucible, Fletcher's, No. 40. Size of Crucible used 51x57mm. ..... 4 75
- 5694/1—Furnace-Body for No. 40 Crucible Furnace ..... 1 00
- 5694/2—Furnace-Cover for No. 40 Crucible Furnace ..... 35

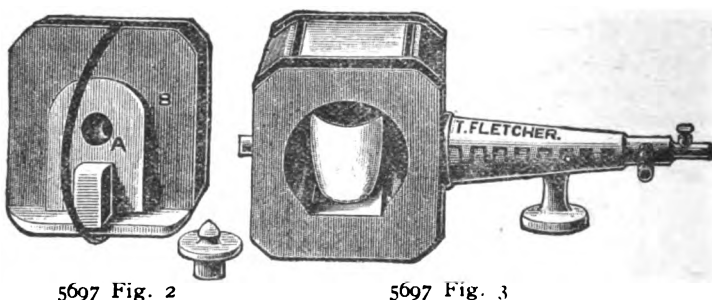
\*5695—Furnace, Crucible, Fletcher's, No.40A, with improved gas burner.  
Size of Crucible used 51x57 mm.....

\$ 5 55



5695

5697 Fig. 1



5697 Fig. 2

5697 Fig. 3

\*\*\*5697—Furnace, Fletcher's Lecture and Experimental Furnace, No. 41 H. Working with the same burner as a draft or blast furnace at any temperature and adapted for crucibles, muffles, tubes, cupels, distillation by descension, treatment of refractory substances with gases at high temperatures, small forgings, roasting ores, etc.

This furnace is especially designed for the lecture table, and has, we believe, power and capabilities equal to any demands which may be made on it. It must be remembered that, although the power of the burner is almost without limit, it is not possible, at present, to supply any furnace casing which will stand excessively high temperatures, or the contact of fluxes, without damage. Although not silent when in use at the highest power, it is much less noisy than the Injector Furnace, and a lecturer with a good voice can be heard whilst it is working at full power. When used as a blast furnace, it is mounted as shown in Fig. 1.

When the plug C (Fig. 1) is removed and replaced by the chimney, the foot-blower being stopped, it will raise the crucible to bright redness in about ten minutes. This requires the gas to be turned very low, and the adjustment of the gas as a draft furnace requires some little practice to obtain the best results. If the gas is in excess it burns at the top of the chimney instead of in the furnace, and, of course, does no work. The best results are obtained when the gas is connected to the straight jet, but it will work as a draft furnace fairly well if the gas is connected at the side jet in the same way as when used for blast, but, of course, with a much smaller supply of gas. By turning the casing on its side, as shown in Fig. 3, the contents may be seen by the class whilst the furnace is working, and it can in this position be used for crucibles, muffles, combustion tubes, cupels, or roasting; and with either draft or blast, according to the temperature required.

The plug D is perforated for distillations by descension, and when removed will admit of a 25 mm. combustion tube being passed through the furnace. When used with blast, the instructions of the Injector Furnace must be followed, the only difference being that the Lecture Furnace is more silent than the Injector Furnace and about twice as quick in working.

REMEMBER OUR DISCOUNT.



**\*\*5697—Furnace, Fletcher's Lecture and Experimental Furnace, No. 41 H. (Continued.)**

The crucibles are No. 0 size, and larger sizes must not be used.

NOTE.—When used with a blast and the air is in excess, the burner is liable to scream. If it does so, it is a sign that the gas supply is deficient for the blast used. When the lid is lifted, close the revolving burner slide.

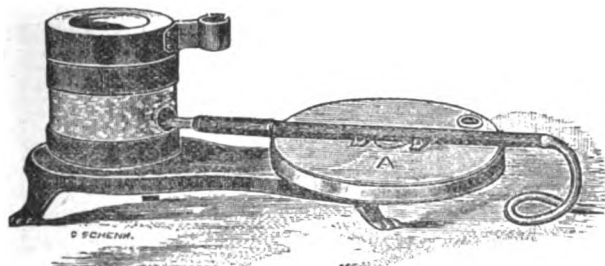
**PRICES.**

No. 41 H. Fletcher's Experimental Furnace, with Muffle	
and No. 0 Crucible, without Foot-Blower.....	\$39 60
Burner alone .....	11 90
Extra Muffles, Salamander.....	2 04
Extra Muffles, Fire-clay .....	79

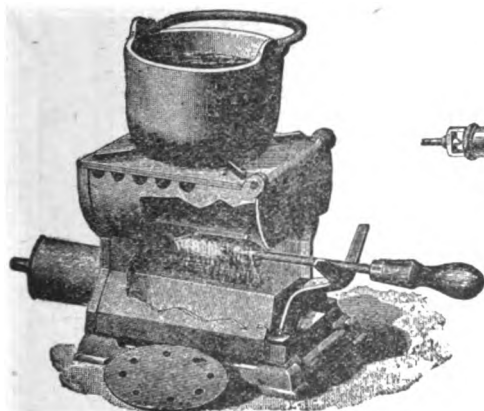
**\*5700—Furnace, Crucible, Fletcher's No. 40B, for refined petroleum. Size of Crucible used 51x57 mm. ....**

**\$ 7 15**

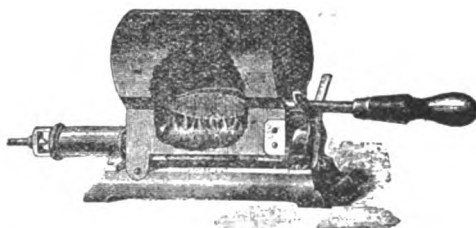
No. 10A Foot Blower is recommended for Nos. 5694, 5695 and 5700 furnaces.



5700



5702



5701

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*5701—Furnace, Fletcher's Excelsior Gas Furnace No. 18, for heating soldering irons for tinner, plumbers, electrotypers, etc. It will heat a 1.3 kilos copper in three minutes.**

For gas .....

**2 08**

For gasoline gas.....

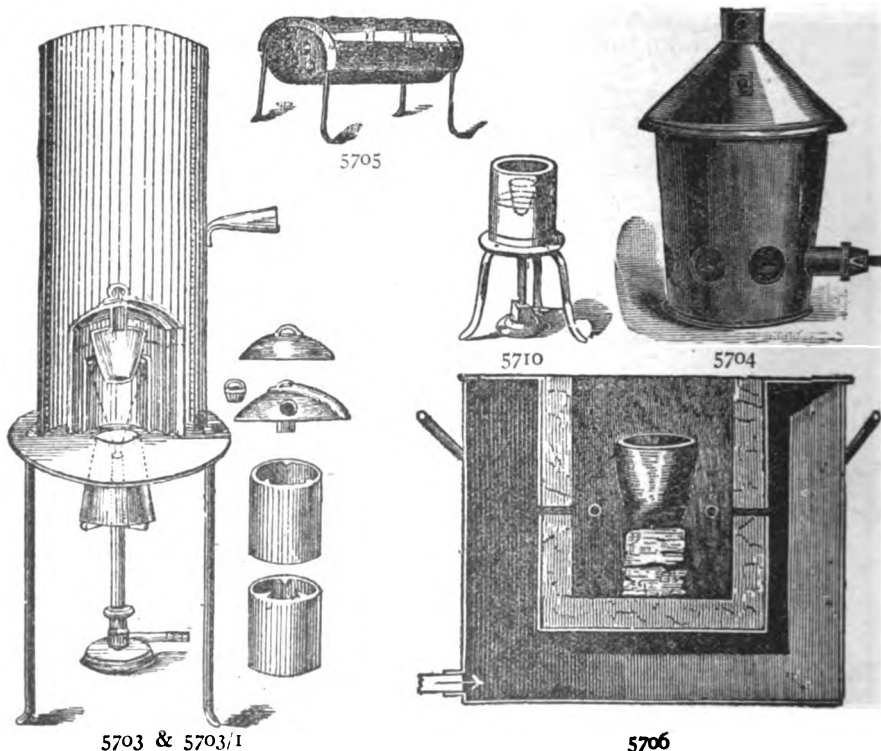
**3 10**

**\*5702—Furnace, Fletcher's Acme Gas Furnace No. 18A, for heating soldering irons, and general use in metal pattern work, electrotyping, etc. Two flames issue horizontally from narrow slits, and meet under the soldering iron, which is enveloped by them as they rise. The space under the iron is clear, and any solder or soldering fluid dropping from it will fall through the burner and be caught on a tray below, it being entirely impossible for the burner to become clogged by any fair usage. The furnace is constructed almost entirely of cast-iron, wire gauze being entirely dispensed with. The top of the hood is flat, with a griddle hole, and can be used for melting solder, heating articles to be soldered, etc., etc. ....**

**4 35**

- \*5703—Furnace, Hempel's;** a gas furnace for incineration and oxidation indispensable for the laboratory. It is so constructed that a current of air is introduced directly into the crucible. A Bunsen burner will oxidize quicker than any blast. Small pattern, taking crucibles to 5 cm. diameter ..... \$ 10 00
- \*5703/1—Ditto, ditto.** Large pattern, taking crucibles to 8 cm. diameter ..... 18 75
- \*5704—Furnace, Fletcher's Perfected Ladle Furnace, No. 14,** with Fletcher's new Solid Flame Heating Burner, for melting lead, tin, zinc, and their alloys. This is a better ladle furnace in every respect than any other made. The burner is simple, safe, and works equally well with any gas supply available, giving proportionate speed of working. It can be removed from the casing and used for other purposes if desired ..... 5 55
- \*5705—Ditto, according to Carlius, for five tubes.** ..... 20 00

REMEMBER OUR DISCOUNT.

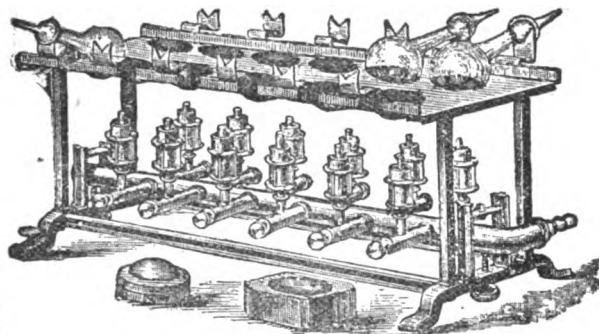


- \*I 5706—Furnace, Blast, according to Sefstroem,** of heavy sheet-iron; the inside box lined with fire-clay; with dome lined with fire-clay.
- |                            |          |       |       |        |
|----------------------------|----------|-------|-------|--------|
| Height of fire-place ..... | 160      | 200   | 250   | 300mm. |
| Diam. of fire-place .....  | 125      | 175   | 200   | 250mm. |
|                            | \$ 24 35 | 30 35 | 35 00 | 47 50  |
- \*5707—Furnace, according to Kreussler,** for supplying a uniform heat, for making digestions in flasks, etc. Used in the determination of nitrogen by Kjeldahl. The top plate can be removed and the furnace used for heating water-baths, drying ovens and other apparatus requiring a uniform heat. (Illustr. p. 265.) ..... 70 00
- \*5710—Ditto, Erdman's,** a clay cylinder, iron tripod and Bunsen burner ..... 1 25
- \*5711—Furnace, Electric, Roessler's.** These furnaces enable the operator to produce a heat up to 1400° Celsius in a few minutes, by connecting the furnace with any current of 100 to 110 Volts. (Illustr. p. 265.)

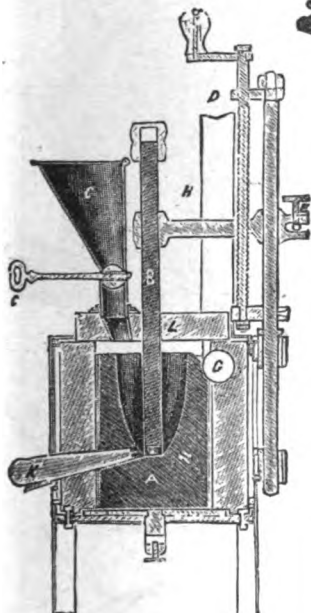
In ordering state resistance.

No. 10 (to 100 Amp. at 50 to 60 Volts)	without cable.....	\$ 75 00
No. 20 (to 100 Amp. at 50 to 60 Volts)	without cable.....	180 00
No. 30 (to 150 Amp. at 50 to 60 Volts)	without cable.....	180 00
No. 40 (to 250 Amp. at 50 to 60 Volts)	without cable.....	247 50
No. 50 (to 500 Amp. at 50 to 65 Volts)	without cable.....	495 00

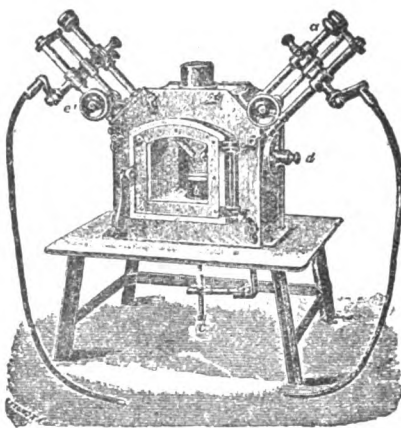
**'5711/1—Furnace, Electric, for continuous use, (to 200 Amp. at 50 to 70 Volts)..... \$ 166 30**



5707



5711/1



5711

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=50 grm.

**\*\*3711/2—Furnace, Electric.** This furnace is adapted to use upon any lighting circuit of 52, 110 or 220 volts, either direct or alternating. Size, interior measurement, 76x51x69 mm. Placed in position as shown by cut, they can be used for melting gold or other metals in crucibles. A heat of approximately 3000°F. can quickly and safely be attained. A fusible connection is so arranged in this furnace, that if through neglect or otherwise the heat approaches the fusing point of platinum, its maximum capacity, the connection only will be destroyed. A new one can be set in position in a moment, without the slightest injury to the furnace, or serious interruption of work in hand. A mica window in door makes all parts of the interior perfectly visible when heated.

A Rheostat, as shown in the illustration, accompanies each furnace, and controls the degrees of heat from minimum to maximum.

It is invaluable to Dentists, Metallurgists, Jewelers, Chemists, Assayers and College Laboratories, and will, with reasonable and proper care, last many years. (Illustr. p. 266.)

**In ordering state kind of lamp socket in use and voltage of circuit.**

Clear and explicit instructions will be furnished, also two fusible connectors.

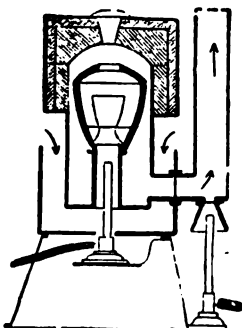
Complete Furnace with Rheostat, 52 and 110 volts.....	\$45 00
"    "    "    "    220 " .....	50 00

**Fusible Connectors, when furnished extra; each**..... 85

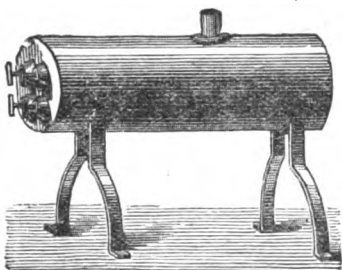
**LARGER SIZES FURNISHED TO ORDER AT  
LOWEST PRICES.**

\*I 5713—Furnace, Roessler's Gas Furnace, for high temperatures. Artificial draft is caused by a small Bunsen burner, the air admitted to the fusion burner being heated before reaching the burner. It melts silver in about 15 minutes, pure gold in about 20 minutes, and an alloy of 9/10 gold and 1/10 platinum in about 40 minutes.

For crucibles..... 30 40 70 mm. diameter.  
Price including burners.... \$47 60 52 50 63 00



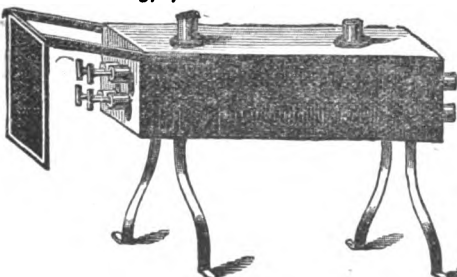
5713



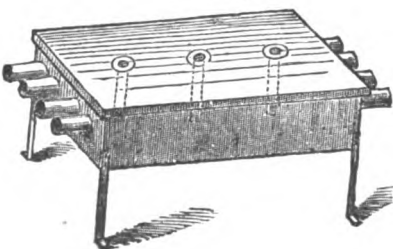
5717



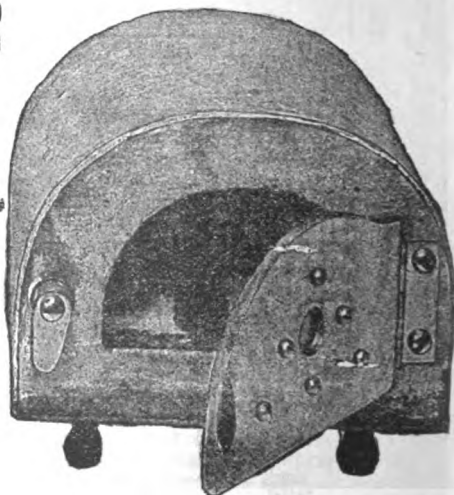
5711/2 (Rheostat.)



5717/1



5715



5711/2

\*5715—Furnace, Erlenmeyer's, for two and four tubes.  
\$10 00 13 00

\*I 5717—Furnace, cylindrical, made of wrought iron, with four tubes closed by screw-caps.....

\$ 32 50

\*I 5717/1—Furnace, rectangular, made of wrought iron, brazed, with four tubes closed by screw-caps; with safety gauze.....

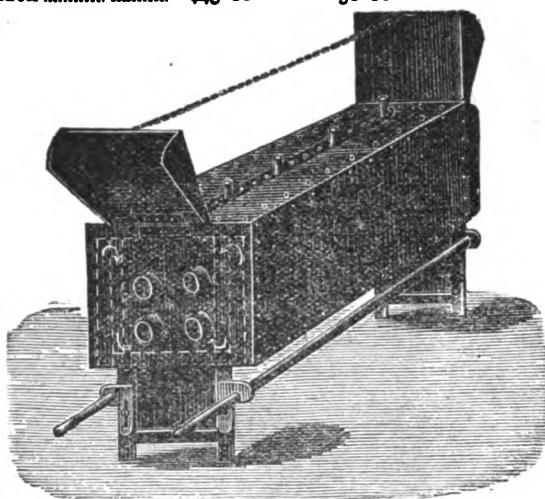
35 00

REMEMBER OUR DISCOUNT.

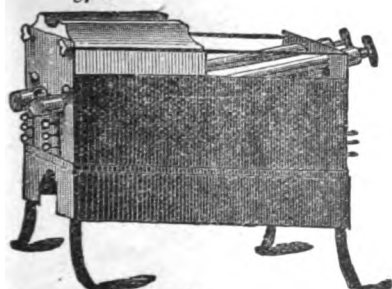
- \*I 5717/2—Furnace, Habermann's, with two tubes closed by screw-caps.  
Top and side plates of clay..... \$ 25 00
- \*I 5717/3 Furnace, according to Lothar Meyer, made of heavy iron  
with asbestos covering; length of tubes 62 cm., inside diameter of  
tubes 32 mm.  
With..... 4 8 tubes  
Each..... \$45 00 51 00



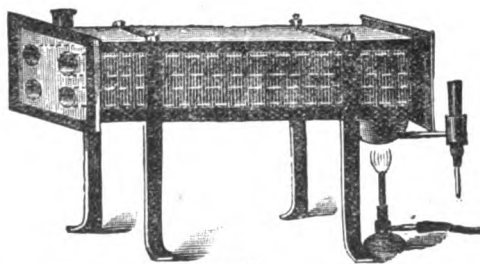
5720



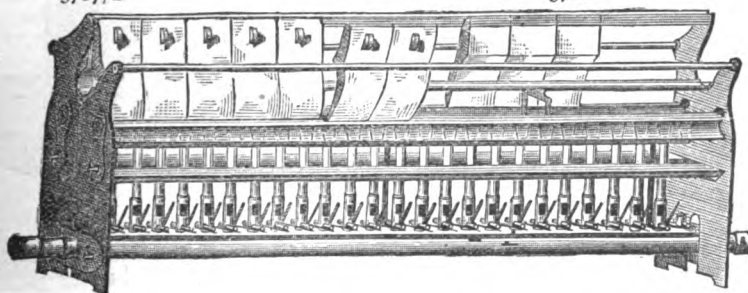
5717/3



5717/2



5718



5725

- \*I 5718—Furnace, Victor Meyer's (Waterbath-Cannon), for filling  
with water, of galvanized iron with asbestos covering and arrangement  
for constant water level.

For.....	2	4 tubes.
Each.....	\$27 50	36 00
With protecting mantle of sheet-iron.....	31 25	40 00

- \*5720—Ditto, of clay, portable.....

- \*5725—Ditto, Combustion, for gas; latest and most approved  
style, according to Bunsen. Every burner is provided with a  
separate stop-cock. With extra tiles and clay slides.

With.....	10	15	20	25 burners.
	\$23 35	31 35	39 35	48 00

Larger sizes made to order!

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

1 85

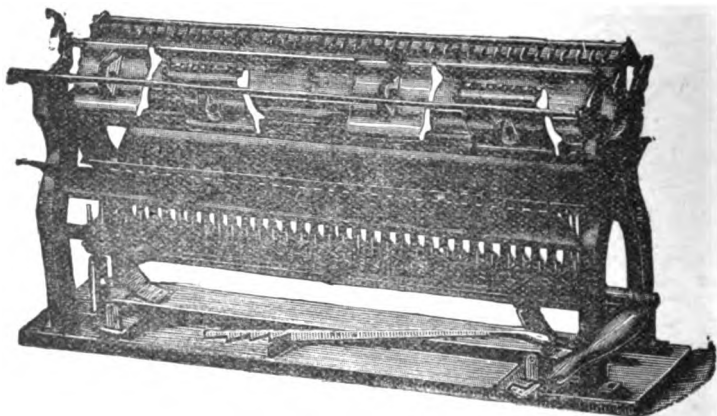
**5730—Furnace, Combustion, according to Bunsen, for naphtha gas.** (See No. 5725.) With 10 15 20 25 burners.  
\$25 35 33 35 42 65 53 30

\*I 5730/1—**Furnace, Combustion, for gas, Bunsen's form, new pattern,** with side parts of cast-iron on wrought-iron plate and arrangement for bringing the burners into a perpendicular or horizontal position. Complete with clay tiles. Burners without air-regulation.

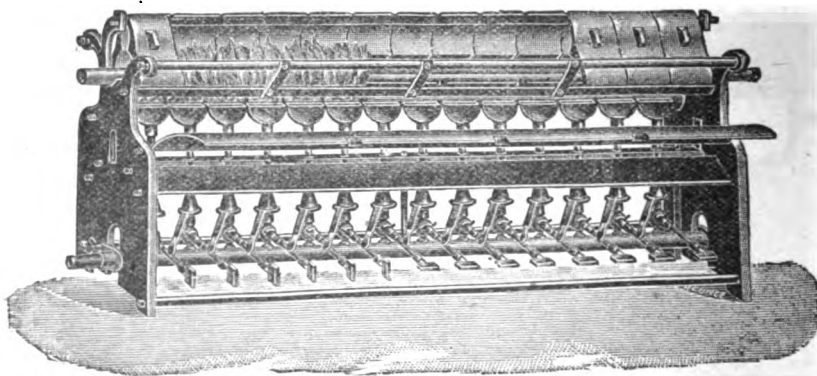
With..... 10 15 20 25 30 35 burners.  
Each..... \$30 00 38 00 46 00 52 00 57 00 63 00

\*I 5730/2—**Furnace, Combustion.** Same as No. 5730/1, but burners with air-regulation.

With..... 10 15 20 25 30 35 burners.  
Each..... \$32 50 41 75 51 00 58 25 64 50 71 75



5730/1, 2 & 3



5730/4

\*I 5730/3—**Furnace, Combustion.** Same as No. 5730/1, but with **Finkener's Burners** with simultaneous regulation for gas and air.

With..... 15 20 25 burners.  
Each..... \$51 00 61 00 72 00

\*I 5730/4—**Furnace, Combustion, according to Teclu,** complete with top-pieces and clay tiles; with arrangement for raising and lowering the burners.

Length of heating surface..... With 7 14 burners.  
Each..... 40 80 cm.  
\$51 00 77 00

\*I 5731/1—**Furnace, Combustion, according to Glaser, with Finkener's Burners,** complete. With 10 15 20 burners.  
Each..... (Illustr. p. 269.)... \$45 00 55 00 66 50

I 5731/2—**Furnace, Combustion, according to Glaser, latest construction, with Finkener's Burners,** complete.

With..... 10 15 20 burners.  
Each..... \$47 50 50 00 70 00

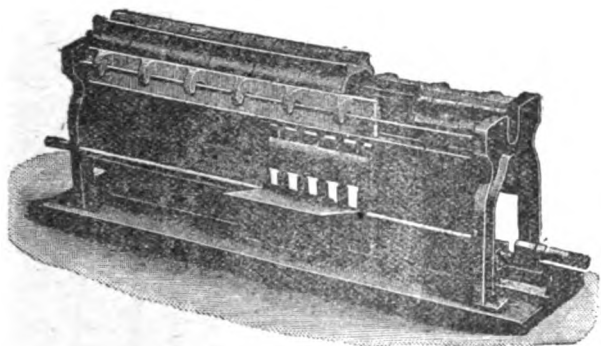
REMEMBER OUR DISCOUNT.

\*I 5731/3—Furnace, Combustion, according to Glaser, modified by Anschuetz & Kekule, with mica plates, enabling the operator to watch the flame during combustion, otherwise same as No. 5731/1.

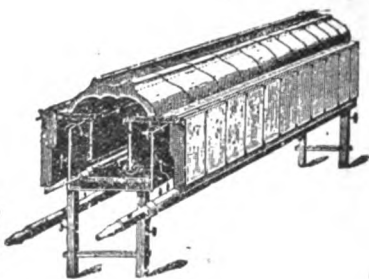
With .....	10	15	20 burners.
Each .....	\$51 50	64 00	78 50

I 5731/4—Furnace, Combustion, according to Glaser, latest construction, with Finkener Burners, with Anschuetz & Kekule's modification, consisting of mica plates, enabling the operator to watch the flame during combustion, otherwise same as No. 5731/2.

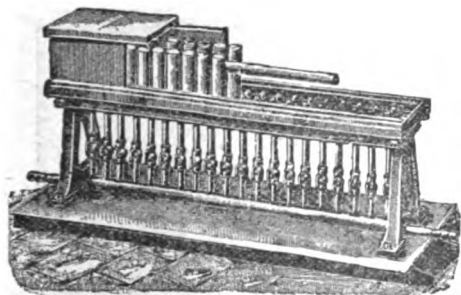
With.....	10	15	20 burners.
Each .....	\$54 50	68 00	82 00



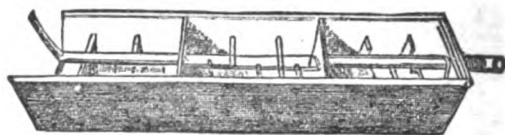
5731/1 &amp; 3



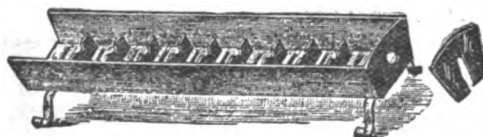
5733



5732/1



5735



5736

\*I 5732/1—Furnace, Combustion, according to A. W. v. Hofmann, consisting of a heavy frame, each burner with stop-cock and T tube with 3 and 5 one-hole burners, perforated clay cylinder, side and cover tiles, complete.

With....	20	26	34 stop-cocks.
With....	60	84	170 burners.
Each .....	\$73 00	98 00	137 50

\*I 5733—Furnace, Combustion, according to Lothar Meyer, for heating substances in sealed glass-tubes, with clay tiles.

Length.....	50	60	80 cm.
Each .....	\$34 00	37 50	41 00

\*5735—Ditto, Combustion, Liebig's, improved by Stenhouse, for use with charcoal, of Russian sheet-iron.

Length,	45 cm.	60 cm.
	\$3 10	3 75

\*5736—Ditto, ditto, with feet.

Length,	45 cm.	60 cm.
	\$3 75	4 40

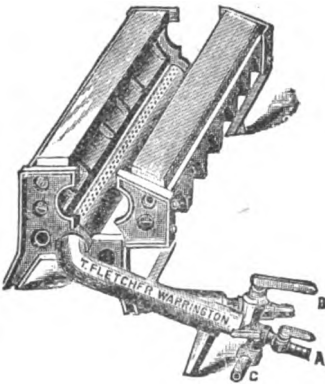
- \*5740—**Furnace, Combustion, Fletcher's Tube Furnace**, for coal gas or gasoline gas. 30 cm. 45 cm. 60 cm.  
 For draft or blast, with adjustable flame length.. \$19 00 25 30 31 65  
 As above, without adjustable length of flame..... 15 80 20 55 26 90  
 With fixed length of flame, without blast ..... 12 65 17 40 22 15  
 Extra fire-clay casing blocks, 15 cm. long, each..... \$ 0 80

\*5741—**Furnace, Combustion, Fletcher's Tube Furnace No. 170—New Pattern.** The special points about this furnace in which it differs from others, are, the burners are outside and in front of the furnace and clear from all falling dirt. There is no ironwork to rust, **brass being the only metal used in its construction.**

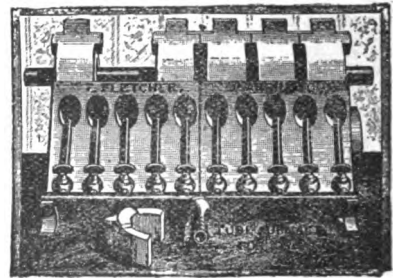
The furnace body is in 15 cm. sections, and can be made up to any length without any obstruction, such as occurs when a long Hoffman furnace is used with a short tube.

The burners can be made any length and any part of them used; the blocks and covers are sold separately, and the burners can be supplied in sections of 30 or 60 cm, so that any number can be used in a line without a break, enabling the furnace to be at once built up to any length required. If a fixed length is required, any number of sections can be secured permanently together. It is free from smell in use. In other respects it is similar to the ordinary Hoffman furnace.

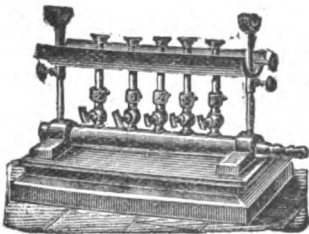
- No. 170, Tube Furnace, 30 cm. .... 41 15  
 No. 170A, Tube Furnace, 60 cm. .... 79 15  
 Extra Cover Blocks, each ..... 79  
 Extra 15 cm. Sections of Body ..... 7 50



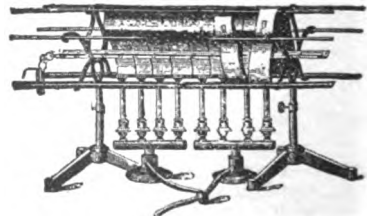
5740



5741



5742



5742/1

- \*I 5742—**Furnace, Combustion, with five burners, each with stop-cock and air regulation** ..... 17 50  
 \*I 5742/1—**Furnace, Combustion, with removable body and Finkener Burners** with flat tube heads. The burners are in sets of four, each set with separate gas supply; with clay tiles and troughs complete.  
 With 2 3 4 sets of four Finkener Burners.  
 \$ 37 50 50 00 61 50  
 \*I 5742/2—**Furnace, Combustion, of the most simple construction,** consisting of four burners with pin-cocks and wing tops and two forked iron rods on support; with half-round iron bed (Illustr. p. 271.) ..... 14 00



\*5744—**Gallipots, amber glass, nickel-plated screw cap, cup bottom.** They are the best Gallipots made. They are packed in pasteboard boxes except the 240 cc. and 480 cc. sizes.

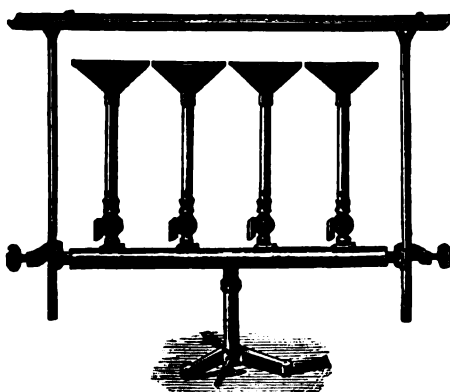
Approximate capacity	7	15	30	60	125	240	480 cc.
Number in original package	5	5	3	3	2	1	$\frac{1}{2}$ gross
Per doz.	\$0 55	60	75	90	1 20	1 80	2 60
Per gross	5 50	6 00	7 50	9 00	12 00	18 00	26 00

By original package, an extra discount of 20 % will be allowed.

5745—**Galvanometers.** See Catalogue of Physical Apparatus.

5748—**Gases, compressed and liquefied, at lowest prices,** such as compressed oxygen, compressed hydrogen, liquefied ammonia, liquefied carbonic acid, and liquefied nitrous oxide.

5748/1—**Ditto. Liquefied Sulphur Dioxide. In steel cylinders,** containing 4.5 to 5.5 45 90 kilos.  
Per kilo, \$1 80 1 00 72  
**Steel Cylinders charged extra, \$13 35 20 85 29 15 each,**  
returnable at prices charged, less freight or expressage.



5742/2

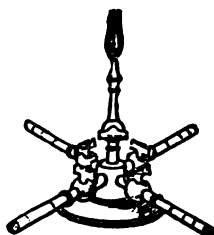


5750



5744

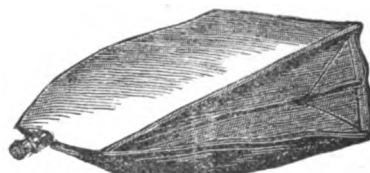
**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



5762



5761



5755

\*5750—**Gas Bags, oval, of best rubber.**

Approximate capacity	4	8	12	16	20	32	40 lit.
	\$1 85	2 60	3 00	3 75	4 10	6 00	7 50

5751—**Ditto, ditto, with brass socket and stop-cock.**

Approximate capacity	4	8	12	16	20	32	40 lit.
	\$3 35	4 10	4 50	5 25	5 60	7 50	9 00

\*5755—**Gas Bags, wedge shape, of rubber.**

Approximate capacity	60 lit.	100 lit.	140 lit.	220 lit.
	\$10 85	13 85	16 85	21 00

5756—**Ditto, ditto, with brass socket and stop-cock.**

Approximate capacity	60 lit.	100 lit.	140 lit.	220 lit.
	\$12 85	15 85	18 85	23 00

5760—**Gas Distributor, of polished brass, with three distributing connectors** \$ 2 65

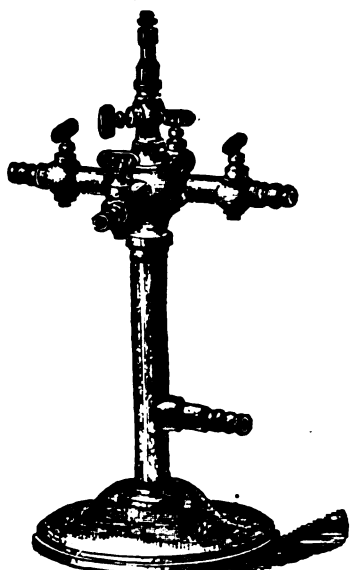
\*5761—**Ditto, ditto, with three stop-cocks** 4 00

\*5762—**Ditto, ditto, with three stop-cocks and an illuminating burner in the center** 6 00

5763—**Ditto, ditto, ditto, nickel-plated** 7 00

- \*5764—**Gas Distributor, brass, stop-cocks 9 mm. bore, elegantly finished.** \$ 12 50  
 \*5768—**Gas Holder, according to Steads, of glass, for taking gas samples, with four glass stop-cocks.** 8 65  
 \*5770—**Gas Holder, Mitscherlich's.** A cylindrical glass jar, 18 in. high, 7 in. diam., with brass top plate, to which is attached by means of a brass tube a glass reservoir, connected with the lower part by a stop-cock and brass tube, to produce pressure on the gas. With tubulature near the bottom, which can be closed by a brass screw. Capacity about 12 lit. 28 35  
 \*5771—**Gas Holders, Berzelius', for chlorine gas, etc.**  
 Capacity                      2 lit.                      3 lit.                      4 lit.  
                                      \$10 00                      10 75                      11 25

REMEMBER OUR DISCOUNT.



5764



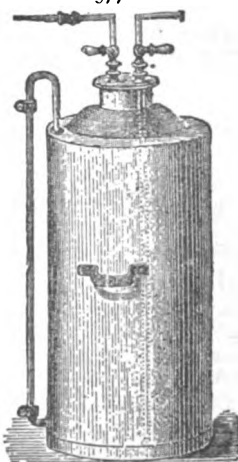
5772



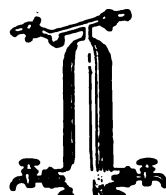
5770



5771



5773 &amp; 5773/1



5768

- \*I 5772—**Gas Holders, of glass, with brass fittings.**  
 Approximate Capacity,                      12 lit.                      15 lit.                      20 lit.  
    \$23 00                      24 75                      30 00  
 \*5773—**Ditto, of copper, very durable.**  
 Approximate Capacity,                      19 lit.                      38 lit.  
    \$25 50                      32 60  
 \*5773/1—**Ditto, of zinc.**                      19 85                      23 30

\*5774—Gas Holders, of glass, with brass fittings. Capacity, 15 lit. .... \$ 33 00

\*5775—Ditto, Pepy's, of japanned zinc, with glass gauge.

Approx. Cap., 19 lit. 38 lit. 57 lit. 76 lit. 95 lit.  
\$21 25 24 75 36 00 42 00 47 50

\*5776—Ditto, ditto, of copper.

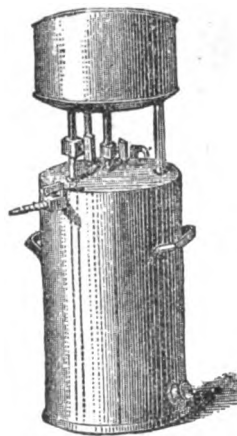
Approx. Cap., 19 lit. 38 lit. 57 lit. 76 lit. 95 lit.  
\$28 35 35 50 49 00 56 00 62 00

\*5777—Ditto, all glass; according to Josef Kavalier; capacity 25 lit. .... 40 00

5780—Ditto, of japanned zinc, double, for oxygen and hydrogen, capacity 76 lit., mounted in frame with pulleys, complete. .... 110 00



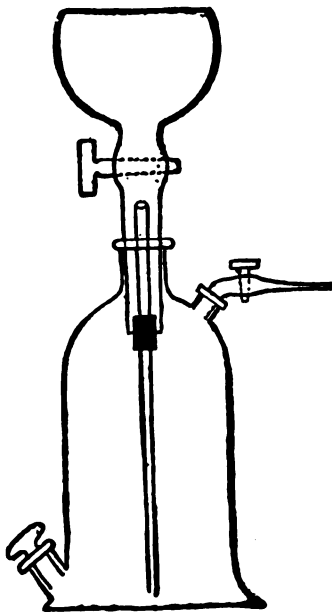
5781/3



5775 &amp; 5776



5774



5777



5781/1

\*5781/1—Gas Holders, made of seamless steel, aluminium bronze finish, 71 cm. high and 25 cm. in diameter. Height from base to top of gauge 94 cm. Provided with a three-valve top fitting and a gauge registering 100 pounds ( $=6\frac{1}{2}$  atmospheres), complete. .... 38 00

\*5781/2—Ditto, ditto, 91 cm. by 30 cm. .... 44 00

\*5781/3—Ditto, ditto, 91 cm. by 30 cm. Same as No. 5781/2, with the exception of having a double-valve top fitting and one valve at the bottom. .... 43 00

APPROXIMATE EQUIVALENTS:

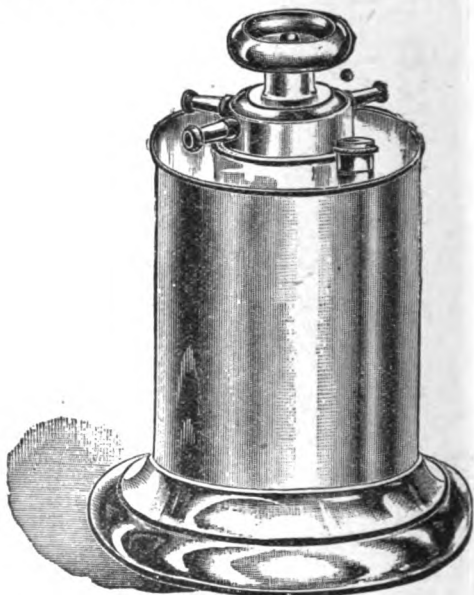
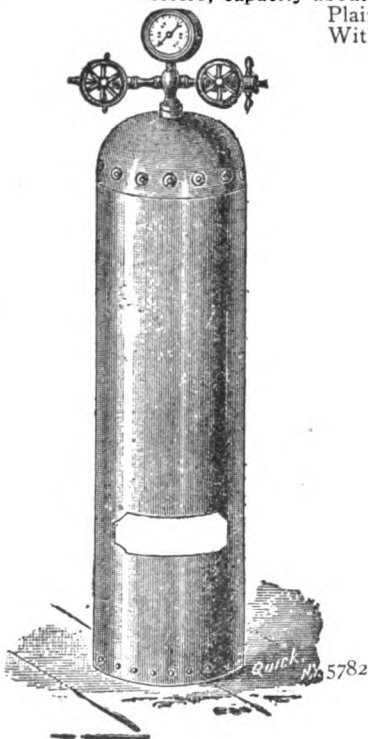
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

- \*5781/4—**Gas Holder**, made of superior tinned steel, with gauge registering to 100 lbs. ( $=6\frac{3}{4}$  atmospheres). Gas Holder has a diameter of 25 cm. and a height of 45 cm. Complete..... \$ 30 00
- \*5782—**Gas Holder**, of copper nickel-plated, tested for a pressure of 300 lbs. ( $=20$  atmospheres) to the square inch; 71 cm. high, 18 cm. diam., with gauge registering to 200 lbs. ( $=13\frac{1}{2}$  atmospheres), complete..... 42 50

For other gas holders, see Nos. 1068 and 1069 and 5781/1 to 5782, Catalogue of Physical Apparatus.

- \*5790—**Gasometer**, Bunsen's, of glass, for use with mercury, graduated into millimeters, capacity about

	250	500	700 cc.
Plain.....	\$ 2 50	2 80	3 10
With glass stop-cock	3 45	3 75	4 10



5795

\*5795—**Gasoline Gas Generator**, No. 45. Made wholly of brass, polished and nicked. It is 114 mm. in diameter and 178 mm. high. It is surmounted by a turret valve of special construction which controls both gas and air outlets by partially revolving the hand wheel to the left, and completely shuts off all connections from the Generator by turning to the right. By means of this valve the size of the flame of the blow-pipe can be controlled from a large brush flame to a fine needle point, without operating the valve of the blow-pipe, if desirable to do so.

The No 6G Blow-pipe (No 3183) is the only suitable for use in connection with this Generator..... 11 85

**Other Gasoline Gas Generators**, see No. 5680 and 5681.



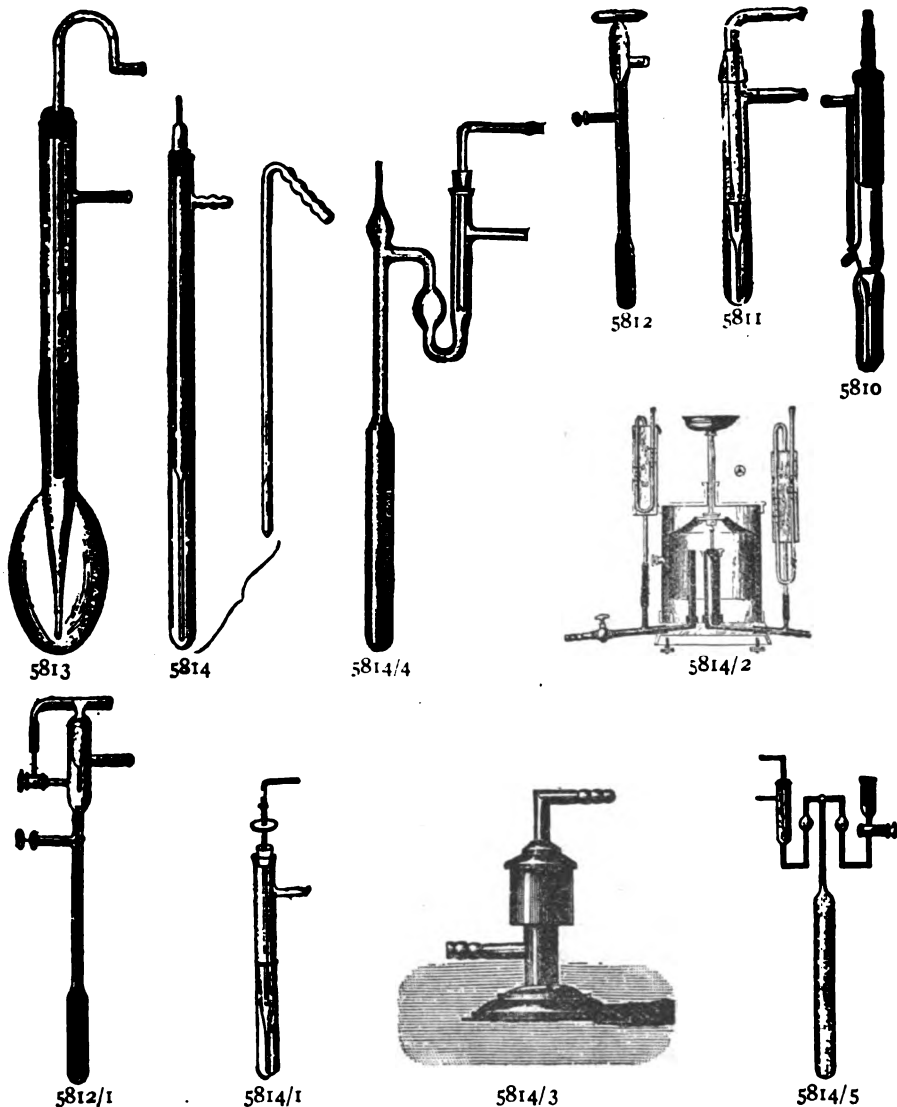
5781/4



5790

REMEMBER OUR DISCOUNT.

*5810—Gas Regulator, according to <b>Bunsen &amp; Kemp</b> , in metal frame	\$ 4 35
*5811—Gas Regulator, <b>Bunsen's</b> , for keeping a hot air bath, etc., at a constant temperature	1 75
*5812—Gas Regulator, <b>Relchert's Thermostat</b> , very accurate in regulating; filled with mercury	2 50
*5812/1—Ditto, <b>Relchert's</b> , with stop-cock	5 60
*5813—Ditto, ditto, simple	1 55
*5814—Ditto, according to <b>L. Meyer</b> , complete with feeding tube and millimeter graduation	1 85



**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

*5814/1—Ditto, according to <b>Muencke</b>	1 90
*5814/2—Ditto, according to <b>Moltessier</b>	22 50
*5814/3—Ditto, according to <b>Girodud</b> , for glycerine or almond oil filling	5 00
*5814/4—Ditto, according to <b>Dunham</b> , for incubators and other purposes where exact temperatures are required.	
glass parts	filled ready for use.
\$ 2 50	4 35
*5814/5—Ditto, according to <b>Soxhlet-Rohrbeck</b> , the best gas regulator made	6 00

**\*5815/1—Gas Regulator, Dr. Roux' New Bi-Metallic Thermo-Regulator, No. E 1125** Designed to meet the demands for an accurate Regulator without the use of mercury or glass in its construction. It is exceedingly simple in operation and regulates more constantly than any other form of Regulator. Inlet tube E is connected by means of rubber tubing to the gas supply, the outlet tube B is connected in the same manner with the burner. A is a set-screw to regulate the flow of gas, and B a lock-nut, C a small set-screw for pilot light.

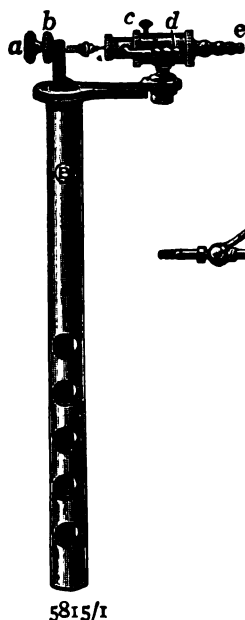
Each 25 cm. 30 cm.  
\$ 15 00 17 50

**\*5815/10—Gas Pressure Regulator, Murrill's No. E 1120.** Latest and most convenient form, for use with a thermostat. Temperature may be held at a constant pressure, regardless of the pressure variations in the supply.

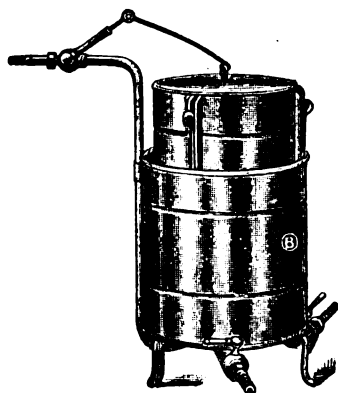
\$ 8 75

**5821 and 5822—Gauges of glass.** See Catalogue of Physical Apparatus.

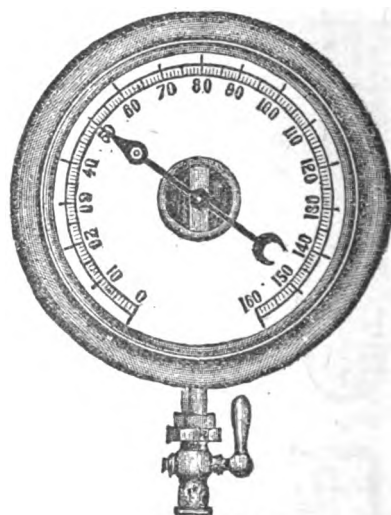
REMEMBER OUR DISCOUNT.



5815/1



5815/10



5825 & 5827

**\*5825—Gauges, Spring, for vacuum.**

Diameter	7.5cm.	10cm.	12.7cm.	15.2cm.	21.6cm.	25.4cm.	30.5cm.
Each	\$ 7 10	8 50	11 35	14 15	25 00	35 00	55 00

**\*5827—Gauges, Spring, for pressure.**

Diameter	7.5cm.	10cm.	12.7cm.	15.2cm.	21.6cm.	25.4cm.	30.5cm.
Each	\$ 7 10	8 50	11 35	14 15	25 00	35 00	55 00

**Gauge and Wantage Rods:**

5830—Gauge, ordinary, with brass points, for measuring barrels.....	1 00
5835—Ditto, with brass and ivory plate, for measuring barrels.....	2 00
5840—Ditto, with heavy brass mounting and ivory plate.....	3 00
5845—Ditto, Wantage (Outstick).....	90
5850—Gauze, of steel wire, standard grade, No. 24, correct mesh and thickness of wire for use with Bunsen Burners, per square foot.....	40
per square meter.....	4 25

**5850/1—Ditto, ditto, cut in square pieces.**

	10 cm.	12 cm.	15 cm.	20 cm. square.
Each	\$ 0 07	10	13	24
Per dozen	0 77	1 10	1 45	2 65
Per square foot 40cts.; per square meter.....	4 25			

**5856—Gauze, of brass wire, standard grade.**

(Mesh to the linear inch.)

No.	10	20	30	40	50	60	70	80	90	100	110	120
Per square foot	\$0 67	67	69	73	77	80	93	1 20	1 40	1 75	2 25	2 70
Per square meter	7 10	7 10	7 30	7 75	8 20	8 50	10 00	12 75	15 00	18 75	24 00	29 00

**5856/1—Gauze, of brass wire, standard grade, same as No. 5856,****No. 30 MESH, correct thickness of wire for use with Bunsen Burners, cut in square pieces.**

	10 cm.	12 cm.	15 cm.	20 cm. square.
Each	\$ 0 12	18	25	45
Per dozen	1 35	2 00	2 75	4 95

Per square foot 6cts.; per square meter.....

\$ 7 30

**5860—Ditto, of pure copper, coarse, No. 30, per square foot 85cts.; per square meter.....**

9 10

**5865—Ditto, of pure copper, fine.**

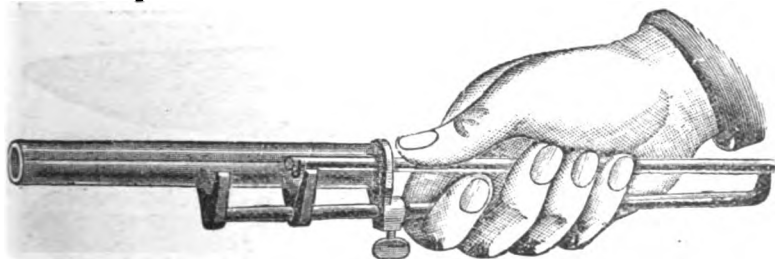
No. 40 60 80 100

Per square foot \$ 0 85 1 05 1 50 2 25

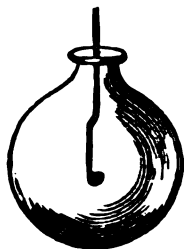
Per square meter 9 10 11 15 16 00 24 00

**5869—Ditto, of pure nickel wire,  $\frac{3}{16}$  mm. thick,  $\frac{1}{16}$  mm. mesh. Per deca 35cts; per hecto \$2 75; per kilo.....**

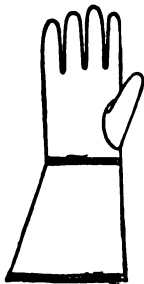
22 20

**5870—Ditto, of platinum wire, coarse and fine. At lowest market price.**

5879/5



5910



5945/1



5930



5920



5879/6

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**5879—Glass Beads or Pearls, used as surface extending medium in drying gases. Per kilo \$3 50; per hecto.....**

45

**\*5879/5—Glass Cutters. It cuts a perfect circle because the glass-tube is held in a parallel position in the fibre rests. Cuts a greater length of tubing from end than any other cutter. Each.....****\*5879/6—Glass Cutters, steel wheel.....**

27

**Glass Cutter (Diamond). See No. 4861.****Glass Plates. See No. 7680, etc.**

2 00

**5880—Glass Powder; per kilo 28cts; per hecto.....**

5

**5890—Glass Wool, finest Bohemian; deca 45cts; hecto \$3 30; kilo.....**

27 50

**5900—Globes, of glass, small, with hook. See Catalogue of Physical Apparatus.****\*5910—Ditto, Deflagration, of well annealed glass, with ground rim around the neck. (Without spoon).**

3.75 lit.	7.5 lit.	11.5 lit.	15 lit.	19 lit.
\$ 1 75	2 50	3 00	3 25	3 50

**With Stand and Cup \$1 00 extra.****\*5920—Ditto, Jewel rs';**

1 lit. 44cts; 2 lit. 61cts.

**\*5930—Gloves, of India Rubber, short, fine.....**

2 25

**5940—Gloves, of India Rubber, Gauntlets, fine, Black or Tan.....**

2 75

**5945—Gloves, of India Rubber, Gauntlets, heavy, Black.....**

4 05

**\*5945/1—Gloves, of India Rubber, half long, acid.....**

6 00

**5946—Gloves, of India Rubber, extra light, pure gum.....**

2 25

5946/1—Gloves, of India Rubber, medium weight, pure gum.....	\$ 2 50
5947 Gloves, of India Rubber, "Mittens," heavy black.....	2 25
5947/1—Ditto, "Mittens," pure gum.....	4 00
5948—Gloves, Asbestos Mittens; per pair.....	3 75
*5950—Goggles, assorted colors, each 25cts.; doz.....	2 10
*5960—Gold Pans, for washing gold, of polished iron, per doz. \$10 00; each.....	1 00
*5960/1—Ditto, of Russian iron, granite enameled.....	1 55
5961—Ditto, of copper.....	5 00
*5962—Gold Washing Horn, of horn.....	1 25
*5963—Ditto, made of black rubber.....	1 85
*5963/1—Ditto, made of copper.....	2 00
5964, etc.—Goniometers. See Catalogue of Physical Apparatus.	
5965—Graduates, tumbler shape, without any graduation, 250 cc. capacity, for dry plate factories; used only for pouring.....	55
5966—Graduates, moulded, not engraved, handsomely decorated, the graduation being moulded in the glass, 16 oz. Each 35 cts., per doz.	3 50
*5967—Graduates, moulded, tumbler shape, the graduation, 8 tea- spoons and 2 tablespoons, being moulded in the glass; a very nice Medicine Graduate. Per gross \$6.25; per doz.....	65
*5968—Ditto, ditto, finer finish, per doz.....	1 00

REMEMBER OUR DISCOUNT.



5950



5962 to 5963/1



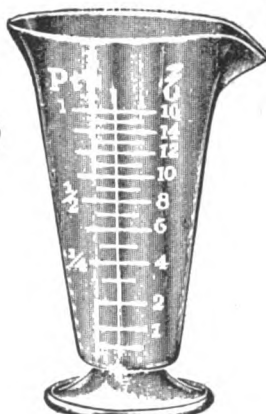
5960



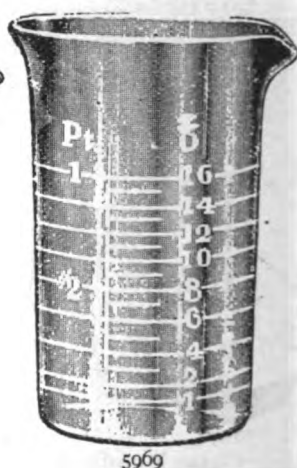
5960/1



5967 &amp; 5968



5970 to 5980



5969

\*5969—Graduates, of glass, beaker form, very accurate.

	8 oz.	16 oz.
Each.....	\$0 65	1 05
Per dozen	7 50	12 00

\*5970—Graduates, of glass, conical form, very accurate.

1 drm. (60 minims)	2 drm. (120 minims)	1	2	4	8	16	24	32	64 oz.
Each \$0 30	35	25	30	38	50	81	1 00	1 25	4 50
Per doz. 3 15	3 50	2 40	2 85	4 05	6 00	9 70	12 00	15 00	42 00

\*5975—Ditto, ditto, ditto.

	15	30	60	100	125	250	500	1000 grm.
\$0 35	35	45	55	70	1 00	1 35	2 25	

\*5980—Ditto, ditto, ditto, with double graduation.

1 drm. (60 minims) and	5 grammes.....	55
2 drm. (120 minims) and	10 grammes.....	60
¼ oz. and	15 grammes.....	35
1 oz. and	30 grammes.....	38
2 oz. and	60 grammes.....	56
3 oz. and	90 grammes.....	70
4 oz. and	125 grammes.....	75
8 oz. and	250 grammes.....	1 10
16 oz. and	500 grammes.....	1 55
32 oz. and	1000 grammes.....	2 75



\*5990—Graduates, of Berlin porcelain, with lip and handle, with graduation inside in black color.

4 8 16 32 oz.  
\$0 62½ 90 1 60 2 25

\*6000—Grindstones, in box. Diameter, 15 20 25 cm.

\$1 35 1 90 2 50

6023—Hæmoglobinometer, (Tallquist's Hæmoglobin Scale). It is easily carried in the pocket as a wallet, and as Cabot says, in his book on the Blood, it can be used by anyone with sufficient accuracy for practical purposes and with a celerity that makes hæmoglobin estimation no more of an undertaking than feeling the pulse. Each.....

\$ 2 50

\*6025—Hallmeter, according to Fuchs, for examining beer, on support, with 1000 grain bottle.....

3 10

\*6030—Hammer, for blow-pipe use, of best English cast-steel, with wooden handle, Berzelius'.....

75

\*6035—Ditto, ditto, ditto, Plattner's.....

75

\*6040—Ditto, ditto, ditto, Colton's improved form, metal handle.....

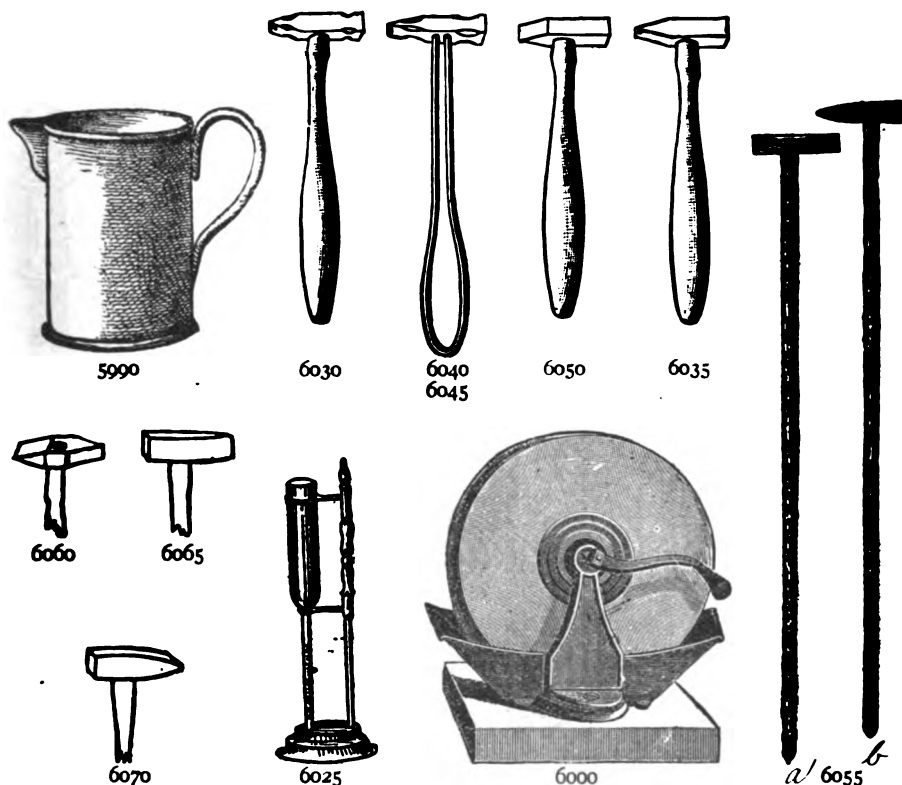
90

\*6045—Ditto, ditto, ditto, metal handle, nickel-plated.....

95

\*6050—Ditto, ditto, ditto, Plattner's, with edge parallel with wooden handle.....

75



APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=490 grm.

\*6055—Ditto, Geological, of best English cast-steel, with chisel edge and walking cane, 91 cm. long. Weight of hammer 900 grms., form a or b. With white cane. With polished cane.

Each..... \$3 00 4 25

\*6060—Ditto, Mineralogical, of best English cast-steel, with one edge parallel and one edge at right angle with handle.

175 grms. 325 grms. 600 grms. 1100 grms.  
Each..... \$1 50 1 70 2 50 4 00

\*6065—Ditto, ditto, Dana's, with edge parallel with handle and square face.

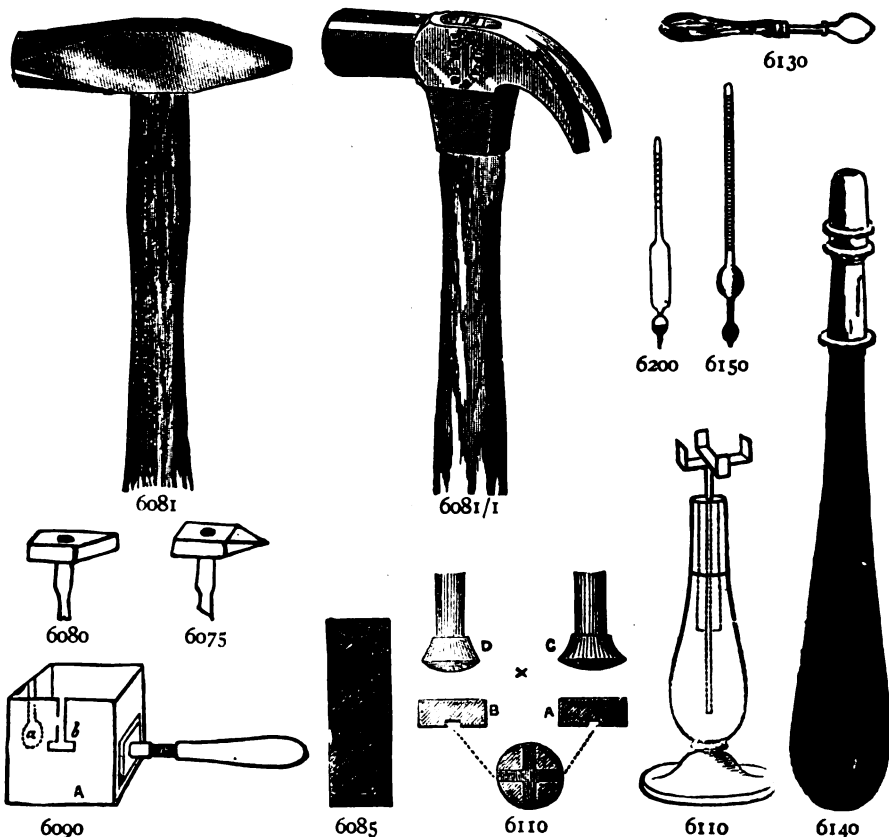
400 grms. 500 grms. 650 grms. 1450 grms.  
Each..... \$1 50 2 10 2 65 4 40

\*6070—Ditto, ditto, ditto, with edge at right angle with handle and square face.

400 grms. 500 grms. 650 grms. 1450 grms.  
Each..... \$1 50 2 10 2 65 4 40

- \*6075—**Hammer, Mineralogical**, hammer and pick combined; 900 grms., face 31 mm ..... \$ 3 00
- \*6080—Ditto, ditto, Maynard's, with cutting edge on the side ..... 2 35
- \*6081—**Hammers, solid cast-steel, Standard**, with handle.
- |                       | No. 0  | 1    | 2    | 3    | 4    | 5    | 6    | 7         |
|-----------------------|--------|------|------|------|------|------|------|-----------|
| Weight without handle | 115    | 200  | 255  | 340  | 425  | 510  | 625  | 740 grms. |
| Each                  | \$0 72 | 75   | 78   | 82   | 85   | 91   | 98   | 1 04      |
| Per dozen             | 7 15   | 7 50 | 7 80 | 8 15 | 8 45 | 9 10 | 9 75 | 10 40     |
- \*6081/1—**Hammers, solid cast-steel, Standard Brand**. Weight without handle 115 grms. Each \$0 83; per dozen ..... 8 25
- Heliostats.** See Catalogue of Physical Apparatus No. 6083/1, etc.
- \*6085—**Holder**, of clay, for small capsules and crucibles, used in blow-pipe analysis ..... 35
- \*6090—Ditto, for charcoal, with platinum ring and shield ..... 4 50
- 6091—Ditto, for charcoal, without platinum ring and shield ..... 2 50
- 6100—Ditto, for chimney, for use with blow-pipe lamp ..... 2 00
- \*6110—Ditto, for cupels, with two moulds and a stamp, for blow-pipe use ..... 1 90

REMEMBER OUR DISCOUNT.



- 6120—**Holder**, for evaporating dish, with ring and triangle, for blow-pipe use; see fig. 6825 ..... 2 65
- \*6130—Ditto, for matrass, for blow-pipe use ..... 35
- \*6140—Ditto, for platinum wire, of hard rubber, improved pattern, the handle serving as a reservoir for platinum wires ..... 1 00
- HOSE, RUBBER, FROM 2-PLY TO 6-PLY AND FROM 13 MM. TO 255 MM. INSIDE DIAMETER, IN ANY QUALITY, AT LOWEST PRICES!**
- Hydraulic Motors.** See Catalogue of Physical Apparatus No. 7268.
- HYDROMETERS, ALL OF STANDARD QUALITY, WITH SCALES, WRITTEN BY HAND.**
- \*6150—**Hydrometer**, for scientific use, standard quality, Beaume's scale, for liquids heavier than water, divided in single degrees, from 0—40°; per doz., \$7 15; each ..... 65
- 6155—Ditto, ditto, ditto, ditto, from 0—70°; per doz. \$7 15; each ..... 65

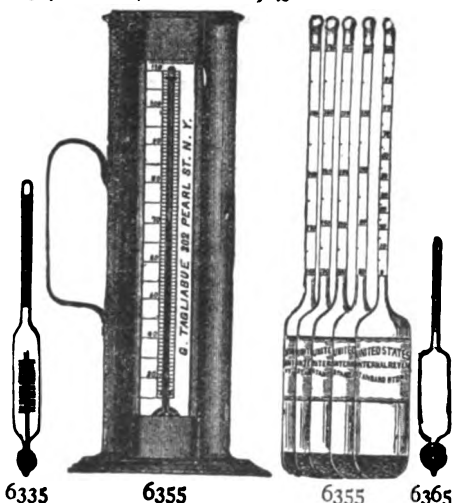
<b>6160—Hydrometers, for scientific use, standard quality, Beaume's scale, for liquids heavier than water, divided in <math>\Delta</math> degrees, from 0—20°; per doz. \$12 50; each.</b>	\$ 1 25
6165—Ditto, ditto, ditto, ditto, from 20—40°; per doz. \$12 50; each.	1 25
6170—Ditto, ditto, ditto, ditto, from 40—60°; per doz. \$12 50; each.	1 25
6175—Ditto, ditto, ditto, <b>divided in single degrees, from 60—80°; per doz. \$7 15; each.</b>	65
6180—Ditto, ditto, ditto, ditto, from 80—100°; per doz. \$8 25; each.	75
6185—Ditto, ditto, for liquids lighter than water, <b>single degrees, from 10—40°; per doz. \$7 15; each.</b>	65
6190—Ditto, ditto, ditto, ditto, 10—70°; per doz. \$7 15; each.	65
6190/1—Ditto, ditto, ditto, ditto, 10—90°; per doz. \$12 00; each.	1 20
6191—Ditto, ditto, ditto, ditto, 10—70°, with thermometer; each.	2 25
6195—Ditto, ditto, <b>for acids, 0—70° Beaume; per doz. \$7 15; each.</b>	65
6196—Ditto, ditto, <b>for acids, small, 15 cm. long, 15—40° Beaume; per doz. \$7 15; each.</b>	65
*6200—Ditto, ditto, <b>for ammonia, 10—40° Beaume; per doz. \$7 15 (Illustr. p. 280); each.</b>	65
6205—Ditto, ditto, for coal oil (U. S. Petroleum Association); per doz. \$7 15; each.	65
6210—Ditto, ditto, ditto, with thermometer; per doz. \$21 50; each.	2 15
6215—Ditto, ditto, ditto, with specific gravity scale and thermometer; per doz. \$25 00; each.	2 50
6220—Ditto, ditto, for ether; per doz. \$7 15; each.	65
6221—Ditto, ditto, for ether, with thermometer; per doz. \$22 50; each.	2 25
6225—Ditto, ditto, <b>for glycerine, from 25—30°, divided into <math>\Delta</math> degrees; per doz. \$15 50; each.</b>	1 55
6230—Ditto, ditto, <b>for lye; per doz. \$7 15; each.</b>	65
6235—Ditto, ditto, <b>for salt solutions (Pickle); per doz. \$7 15; each.</b>	65
6239—Ditto, ditto, for sugar filter wash water, 0—20 in $\Delta$ . Gauged at temperature of 130° F.; per doz. \$15 00; each.	1 50
6240—Ditto, ditto, <b>for sugar and syrup; 0—50° B.; per doz. \$7 15; each.</b>	65
6245—Ditto, ditto, for solutions of sugar, 0—20°, 20—40°, 40—60°, with thermometer in each; set of three with glass cylinder in lined box. These instruments are especially manufactured for us and guaranteed to be absolutely correct. Complete.	20 00
6246—Ditto, for sweet water, Ventzke's; each.	1 25
6250— <b>Hydrometer, Beaume's and specific gravity scales, 0.800—1.000; per doz. \$12 00; each.</b>	1 20
6255—Ditto, ditto, ditto, 0.700—1.000; per doz. \$12 00; each.	1 20
6260—Ditto, ditto, ditto, 0.700—0.850; per doz. \$12 00; each.	1 20
6265—Ditto, ditto, ditto, 0.850—1.000; per doz. \$12 00; each.	1 20
6270—Ditto, ditto, ditto, 1.000—2.000; per doz. \$12 00; each.	1 20
6275—Ditto, ditto, ditto, 1.000—1.400; per doz. \$12 00; each.	1 20
6280—Ditto, ditto, ditto, 1.400—2.000; per doz. \$12 00; each.	1 20
6281—Ditto, Beaume's and specific gravity scales, with thermometer 0.700—1.000; per doz. 21 50; each.	2 15
6282—Ditto, ditto, ditto, 1.000—2.000; per doz. \$21 50; each.	2 15
6285—Ditto, specific gravity scale, 0.700—1.000; per doz. \$9 00; each.	90
6286—Ditto, ditto, 0.995—1.015; per doz. \$15 00; each.	1 50
6290—Ditto, ditto, 1.000—1.400; per doz. \$9 00; each.	90
6295—Ditto, ditto, 1.400—2.000; per doz. \$9 00; each.	90
6300—Ditto, ditto, 1.000—2.000; per doz. \$9 00; each.	90
6305—Ditto, ditto, 0.800—1.000; per doz. \$9 00; each.	90
6309—Ditto, ditto, 0.700—2.000 (Universal), with thermometer; each.	3 50
6310—Ditto, ditto, <b>0.700—2.000 (Universal), without thermometer; per doz. \$21 50; each.</b>	2 15
6311— <b>Hydrometers, NORMAL, with thermometer, set of three, with specific gravity scale, 0.700—1.000, 1.000—1.400, 1.400—2.000. They are absolutely correct in every part of the scales. Per set.</b>	12 00
6315—Ditto, specific gravity scale, set of two, 0.700—1.000 and 1.000—2.000, with solution tube on wooden foot.	4 00
6320— <b>Hydrometers, for alcohol, Tralle's and proof-mark scales; per doz. \$9.00; each.</b>	90
6325—Ditto, ditto, Tralle's scale (percentage by volume), with thermometer; each.	1 75
6330—Ditto, ditto, Tralle's scale (percentage by volume), and Richter's scale (percentage by weight), with thermometer; each.	2 00

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

REMEMBER OUR DISCOUNT.

*6335—Hydrometers, for alcohol, U. S. custom house, with Tralle's and proof-mark scales, with thermometer and correction table on the instrument; per doz. \$17.50; each .....	\$ 1 75
6340—Ditto, ditto, ditto, with jar, in leather-lined case .....	7 50
6345—Ditto, for alcohol of low grade, from 0—25° Tralle; per doz. \$9.00; each .....	90
6350—Ditto, for alcohol, Gay-Lussac's, with thermometer; each .....	2 15
*6355—Ditto, ditto, G. Tagliabue's patent, adopted as standard by the U. S. treasury department. Set of 5 hydrometers, with copper cup, with ivory thermometer attached. The whole packed in a neat walnut or mahogany case. Per set .....	47 50
6360—Ditto, for bark liquids; per doz. \$7.15; each .....	65
*6365—Ditto, for milk; per doz. \$7.15; each .....	65
6366—Ditto, for milk, N. Y. Board of Health Lactodensimeter; per doz. \$7.15; each .....	65
6366/1—Ditto, ditto, with thermometer; per doz. \$25.00; each .....	2 50
6367—Ditto, for milk, Quevenne's Lactodensimeter .....	1 25
6367/1—Ditto, ditto, ditto, with thermometer .....	2 50
6368—Ditto, for milk, Spencer's .....	2 50
6369—Ditto, for milk, Soxhlet's .....	2 50
6370—Ditto, for f-t oils; each .....	90
6375—Ditto, for fat oils, with thermometer; each .....	2 15
6379—Ditto, for salt solutions (Salometers), 0—100°; per doz. \$7.15; each .....	65
6380—Ditto, for salt solutions, percentage scale; per doz. \$7.15; each .....	65
6385—Ditto, for silver solution (actino-hydrometer); per doz. \$8.75; each .....	80
6390—Ditto, for wort and beer (Saccharometer), Balling's, per doz. \$7 15; each .....	65
6395—Ditto, ditto, ditto, with thermometer; per doz. \$20.00; each .....	2 00
6400—Ditto, ditto, Kaiser's; per doz. \$7.15; each .....	65
6405—Ditto, ditto, ditto, with thermometer; per doz. \$19.00; each .....	1 65
6410—Ditto, for urine, 1.000—1.060, with solution tube; per doz. \$8.25; each .....	75
6415—Ditto, ditto, set of two, 1.000—1.025 and 1.025—1.050; per set .....	1 25
6416—Ditto, ditto, 1.000—1.060, with thermometer and solution tube; per doz. \$20 00; each .....	2 00
6420—Ditto, ditto, with fine thermometer and graduated cylinder, in lined mahogany case .....	8 50
6424—Ditto, ditto, with enameled stem and graduated cylinder; per doz. \$12.50; each .....	1 25
6426—Ditto, ditto, according to Dr. Squibb, with thermometer, cylinder and correction table .....	2 50
6427—Ditto, ditto, ditto, without thermometer .....	1 25
6430—Ditto, for vinegar; per doz. \$7.15; each .....	65
6435—Ditto, for wine and must, Oechsle's; per doz. \$9.00; each .....	90
6440—Ditto, Twaddell's, for liquids heavier than water. The degrees on the instrument multiplied by 5 and added to 1000 give the specific gravity.	
No. 1                      2                      3                      4                      5                      6	
0—24                      24—48                      48—72                      72—102                      102—134                      134—160°	
Each, \$0 75. Set of 6, No. 1—6, \$4 05	
6445—Ditto, Brix', for syrup, very reliable. Set of three, 0—30, 30—60 and 60—90, graduated in $\frac{1}{2}$ °. Per doz. sets, \$35.00; set .....	3 25
6446—Ditto, ditto, ditto. Set of three, 0—30, 30—60 and 60—90°, graduated in $\frac{1}{4}$ °, set .....	5 00
Per doz. sets .....	55 00
6447—Ditto, ditto, ditto, 0—10, 10—20, 20—30, 30—40, 40—50, 50—60, 60—70, 70—80, 80—90°, graduated in $\frac{1}{4}$ °. Per doz. \$12 00; each .....	1 20
6448—Ditto, ditto, ditto, ditto, graduated in $\frac{1}{10}$ °. Per doz. \$15.00; each .....	1 50
6450—Ditto, ditto, ditto. Set of three with thermometer, from —5° to +85°, graduated in $\frac{1}{4}$ °; per set .....	9 00



6453—Hydrometer, Standard Sucrose, according to Drs. Wiley and Spencer. In sets of three, standard quality, 0—10, 10—20, 20—30° in 1°. Per set.....	\$ 4 05
6454—Ditto, ditto, ditto, with flat stems; per set.....	5 00
*6455—Ditto, of glass, Nicholson's, each.....	2 50
*6460—Ditto, of brass, Nicholson's, each.....	3 75
*6462—Hydrometer, according to Prof. G. H. Failyer, for ascertaining the specific gravity of minerals, etc., by means of which the work can be done very rapidly. Directions: Note the position of the instrument in water by reading through the water (that is, at the lower instead of the upper surface of the film separating the water and the air), where the plane of water cuts the stem. By this means the meniscus gives no trouble. The solid is then placed in the upper pan and another reading taken. A third reading is taken with the substance in the lower pan. The first reading subtracted from the second will give a number representing the weight of the substance; the third from the second, the displaced water. The gravity is then found in the usual way. ( <i>Journal of Analytical Chemistry</i> , 1890, p. 309.).....	3 10
6465/1—Hydrometer, of silver, T. V. Gendar's new standard, graduated to conform to the government standard in every respect, for alcohol and spirits. Each.....	25 00
6465/2—Copper Case and Thermometer for same.....	6 25
6465/3—Gaugers' Manual.....	4 15
6472—Hydrometer of silver, Balling's Saccharometer, each.....	14 60
6473—Ditto, of German silver, Balling's Saccharometer, each.....	11 65
6474—Ditto, of copper, Balling's Saccharometer, each.....	10 25
6475—Ditto, of silver, Kaiser's Saccharometer, each.....	14 60
6480—Ditto, German silver, Kaiser's Saccharometer, each.....	11 65
6485—Ditto, copper, Kaiser's Saccharometer, each.....	10 25
6490—Ditto, silver, for syrup, each.....	14 60
6491—Ditto, German silver, for syrup, each.....	11 65
6495—Ditto, of copper, for syrup each.....	10 25
6500—Ditto, of copper, for wine and must, each.....	17 50
6501—Ditto, of German silver, for wine and must, each.....	19 00
6502—Ditto, of silver, for wine and must, each.....	23 35
6505—Ditto, of copper, for bark liquids, each.....	10 25
6506—Ditto, of German silver, for bark liquids, each.....	11 65
6507—Ditto, of silver, for bark liquids, each.....	14 60
6510—Ditto, of copper, for salt solutions, each.....	10 25
6511—Ditto, of German silver, for salt solutions, each.....	11 65
6512—Ditto, of silver, for salt solutions, each.....	14 60
6513—Ditto, of silver, for acid, each.....	14 60
6513/1—Ditto, of German silver, for acid, each.....	11 65
6513/2—Ditto, of copper, for acid, each.....	10 25
6513/3—Ditto, of silver, for turpentine, each.....	14 60
6513/4—Ditto, of German silver, for turpentine, each.....	11 65
6513/5—Ditto, of copper, for turpentine, each.....	10 25
6513/6—Ditto, of silver, for milk, each.....	23 35
6513/7—Ditto, of German silver, for milk, each.....	20 50
6513/8—Ditto, of copper, for milk, each.....	19 00
6513/9—Ditto, of silver, for oils, each.....	17 50
6513/10—Ditto, of German silver, for oil, each.....	14 60
6513/11—Ditto, of copper, for oils, each.....	13 15
6513/12—Ditto, of silver, for shellac, each.....	17 50
6513/13—Ditto, of German silver, for shellac, each.....	14 60
6513/14—Ditto, of copper, for shellac, each.....	13 15
6513/15—Ditto, of silver, for glue, each.....	14 60
6513/16—Ditto, of German silver, for glue, each.....	11 65
6513/17—Ditto, of copper, for glue, each.....	10 25

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3000 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.



**Hydrometers with any scale and for any range  
 made to order at lowest prices.**

\*6516—**Hydroscope, Dr. Geo. Richter's, patented.** The hydroscope enables one to read with absolute correctness and precision all varieties of Hydrometers, Specific Gravity Beaume or any other scale, even if liquids are turbid or of very dark color, avoiding the errors arising from the meniscus or the difficulties from opaque cylinders. Each .....

\$ 3 00

\*6516/10—**Hygrometer, "Hygrodeik."** The Hygrodeik is an improved form of Mason's Hygrometer, consisting of 2 thermometers (wet and dry bulb) mounted upon the outer edge of a chart, which has been plotted from new and corrected tables prepared under the direction of the U. S. Weather Bureau. The Hygrodeik chart, while complicated in appearance, is simplicity itself, and obviates entirely the use of tables for temperatures between 20° and 100° F.

Hygrodeik, mounted on japanned iron frame .....

10 00

Hygrodeik, mounted on polished nickel frame .....

11 40

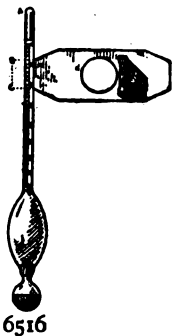
Hygrodeik, mounted on polished brass frame .....

14 25

Hygrodeik, mounted on polished brass frame, oxidized .....

15 70

REMEMBER OUR DISCOUNT.



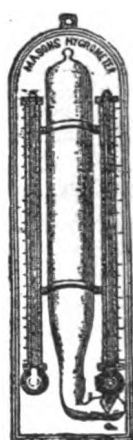
6516



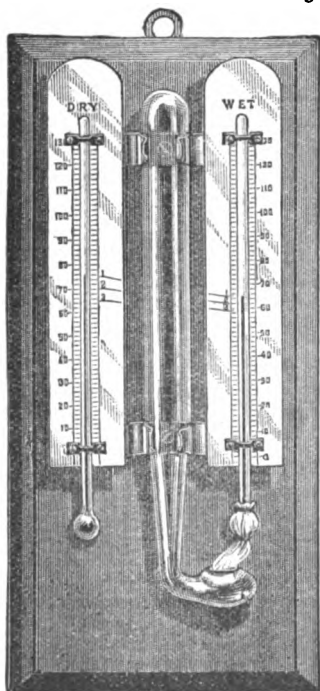
6516



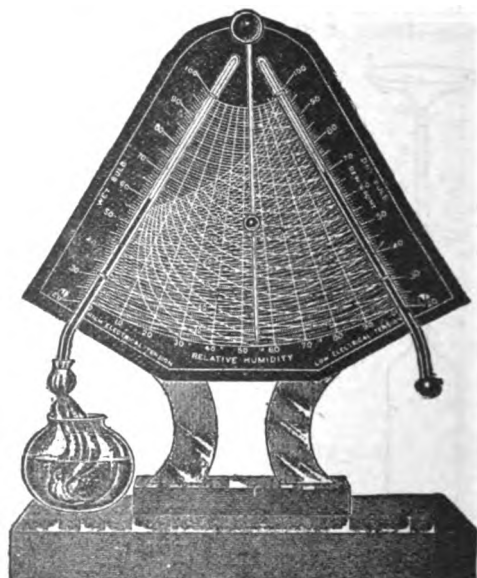
6516



6517



6518



6516/10

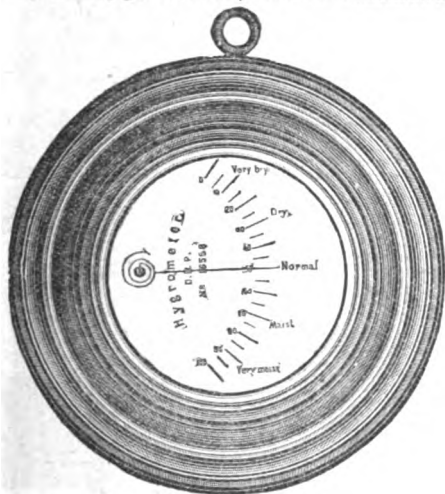
\*6517—**Hygrometer, Mason's on polished wooden frame** .....

3 10

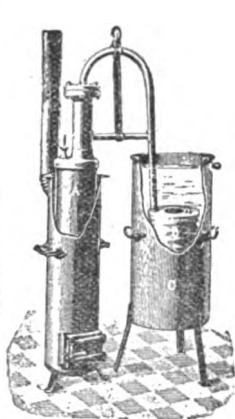
\*6518—**Hygrometer, Mason's Standard, with lines drawn on the scales for convenience in maintaining a humidity of 50° at normal temperatures of the living room; mounted on highly polished hardwood frame. Size 26.5x12cm. Scales raised from frame by insulating straps** .....

6 50

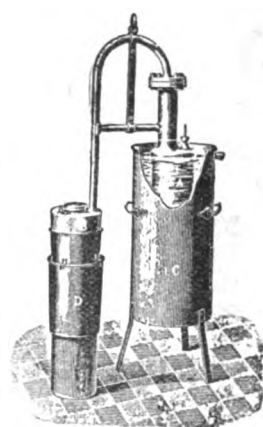
- \*6519—**Hygrometer, Mithof's.** Brass ring on round wooden base.  
 Visible scale 80 mm. 115 mm.  
 Each..... \$3 10 6 20
- \*6521—**Hygrometer, Mithof's.** In round brass case.  
 Visible scale 50 mm. 80 mm. 115 mm.  
 Each..... \$2 70 3 10 6 20
- 6522—**Hygrometer, Mithof's, watch form.** Each..... \$ 11 85
- \*6530—**Hygrometer, August's (Psychrometer).** Two thermometers with  
 paper scales, divided into  $\frac{1}{10}^{\circ}$ , wet and dry bulb, on polished stand..... 13 00
- \*6531—Ditto, ditto, with milk glass scales..... 15 00
- \*6540—**Hygrometer, Daniel's**..... 8 00



6519

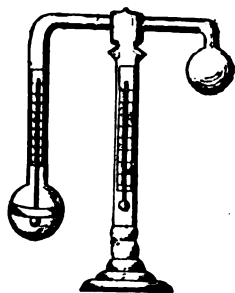


6545/1

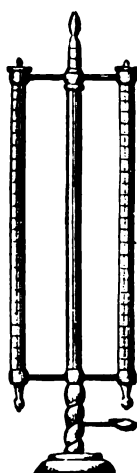


6545/1

A—Ammonia Tank.  
 B—Ice-Producing Vessel.  
 C—Water Tank.



6540



6530 &amp; 6531



6521

\*I 6545/1—**Ice Machines, system Wegelin & Huebner, latest improved form**, especially designed for chemical laboratories, hospitals and households. **All parts welded to insure safety.** Each machine consists of Ammonia Tank with Stove, Ice Producing Vessel, Water Tank and Thermometer.

No.	Capacity in Kilos when using cooling water of 10° C.	Gross Weight in Kilos.	Price
1	2 Kilos.	150 Kilos.	\$ 222 00
2	3 " }	180 "	255 00
3	4 " }	240 "	295 00
4	6 " }	280 "	332 00
5	8 " }	400 "	426 00
6	8 " }	470 "	508 00

**LARGER SIZES IMPORTED TO ORDER AT LOWEST PRICES!**

6550, etc.—**Imps, Carthesian.** See Catalogue of Physical Apparatus.

6569—**Incubator, Bacteriological,** for Physicians' Office and Laboratory use, beautifully finished, double walls, tight fitting doors, rigid iron stand and water gauge; inside dimensions 21.5x20x20 cm.....

\$ 27 50

\*6569/1—Ditto, ditto, same as No. 6569, with thermometer, thermostat, Bunsen Burner and 193 cm. rubber tubing.....

35 00

6569/2—Ditto, ditto, same as No. 6569; inside dimensions 30.5x22.9x22.9 cm..

38 30

\*6569/3—Ditto, ditto, same as No. 6569/2, with thermometer, thermostat, Bunsen Burner and 193 cm. rubber tubing.....

45 80

6569/4—Ditto, ditto, same as No. 6569, but with inside glass door. Inside dimensions 21.5x20x20 cm.....

31 65

\*6569/5—Ditto, ditto, same as No. 6569/4, with thermometer, thermostat, Bunsen Burner and 193 cm. rubber tubing.....

39 15

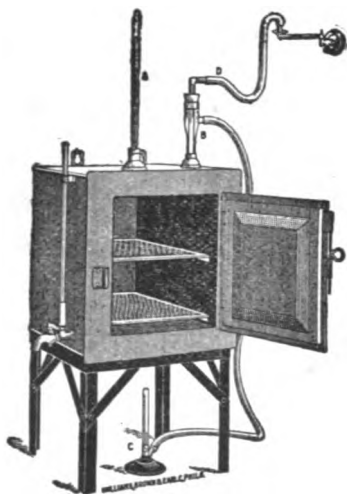
6569/6—Ditto, ditto, same as No. 6569/4; inside dimensions 30.5x22.9x22.9 cm

42 50

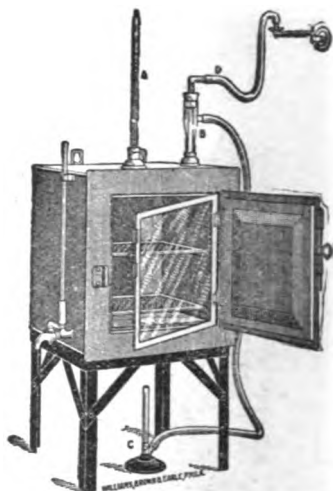
\*6569/7—Ditto, ditto, same as No. 6569/6, with thermometer, thermostat, Bunsen Burner and 193 cm. rubber tubing.....

50 00

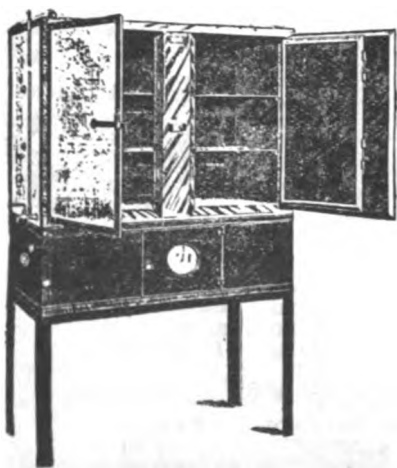
REMEMBER OUR DISCOUNT!



6569/1 & 3



6569/5 & 7



6569/10

Height .....	46	63 5	51 cm.
Width .....	76	76	213 cm.
Depth .....	35.5	46	38
Each .....	\$187 50	255 00	450 00

\*6569/10—**Incubator, Bacteriological,** largo size, three wall, with japanned iron stand 76 cm. high. It is made of heavy copper, with conical bottom. In addition to the 25 mm. water space it has a 25 mm. air space around it, and the outer surface is covered with insulating material to insure even temperature. With inner doors of beveled plate glass, the outer doors of double wall copper, properly fitted, with felt buffers to insure perfect fit and close contact. It has movable shelves, water gauge and drip-cock, with tubulatures for thermometer and gas regulator.

Inside dimensions:

46	63 5	51 cm.
76	76	213 cm.
35.5	46	38
\$187 50	255 00	450 00



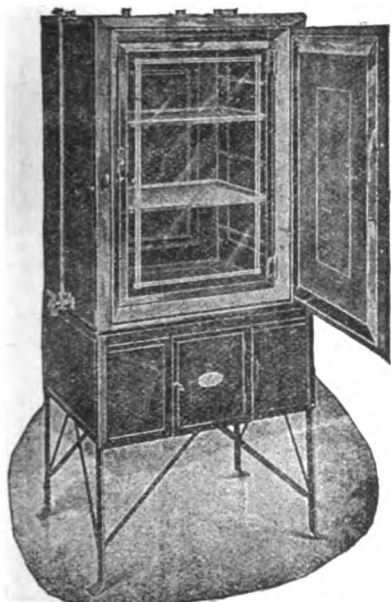
**\*6569/11—Incubator, Bacteriological, small size, three wall, general construction same as No. 6569/10.**

Inside dimensions:				
Height.....	23	30	35.5	46 cm.
Width.....	18	23	30	46 cm.
Depth.....	18	23	25.5	30 cm.
Each.....	\$44 50	58 30	75 00	120 00

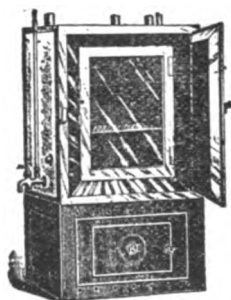
**\*6569/12—Incubator, Laboratory.** Capacity 27 test-tube baskets, 12.5x10x15 cm. Incubating chamber 45 cm. wide, 35 cm. deep and 70 cm. high. Surface of the chamber highly polished. A tubulation for thermometer enters the chamber. Glass door of beveled plate glass with ground border ornamentation. Top of chamber with ventilating aperture. By a ventilating strip on the top, delicate control of the temperature is effected. For connecting with gas supply, a metal pipe passes through the wall space near the thermo-regulator tubulation to the underside of the incubator.

The incubator proper is supported on an iron frame work having a sheet iron chamber enclosing a double Koch safety-burner, which is attached to the base and connected by a union-joint to the pipe just mentioned. With glass-tube water gauge and doublestop-cock. Door of the base with mica window for observation of the flame. The apparatus is substantial without being bulky, and is compact and efficient. Outside dimensions: 63 cm. wide, 49 cm. deep, and 85 cm. high exclusive of support. Height of support 67 cm.

Complete with burner, thermometer and thermo-regulator .....\$ 200 00



6569/12



6569/11

**6569/13—Incubator, Laboratory.** Made of the same weight of copper as No. 6569/12. The incubating chamber holds 18 test-tube baskets and is 45 cm. wide, 35 cm. deep, and 48 cm. high. Three brackets for the support of trays, of which two are furnished. Arrangements for connections to chamber, burner and outside air and facilities for examining and maintaining temperature of the chamber are the same as those of No. 6569/12.

Either the high supporting base as illustrated in fig. 6569/12 or a low sheet iron base built over a metal framework will be supplied with this incubator. A double Koch safety-burner is included in the base. Outside dimensions: 63 cm. wide, 49 cm. deep, and 62 cm. high, exclusive of base. Height of high base 67 cm., of low base 27 cm. Complete with burner, thermometer and thermo-regulator and high base.....

173 00

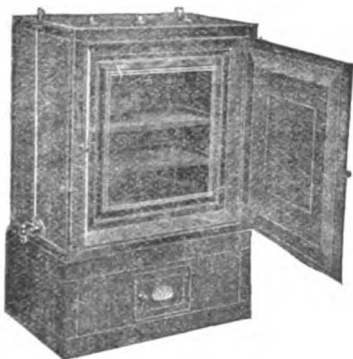
160 00

**APPROXIMATE EQUIVALENTS:**

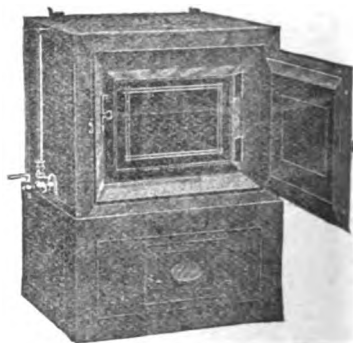
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*6569/14—Incubator, Laboratory.** The incubating chamber holds 12 test-tube baskets and is 45 cm. wide, 24 cm. deep, and 48 cm. high. Three brackets are arranged so that either one-third or one-half of the height is available above or below a tray. Two trays are furnished. The low base inclosing a large single Koch safety-burner is supplied. Outside dimensions: 63 cm. wide, 36 cm. deep, and 62 cm. high exclusive of base. Height of low base 27 cm.  
 Complete with burner, thermometer and thermo-regulator ..... \$ 133 25  
 If furnished with high base ..... 146 50
- \*6569/15—Incubator, Laboratory,** holding 8 test-tube baskets. Incubating chamber 30 cm. wide, 24 cm. deep, and 48 cm. high. Two trays may be supported at different heights in the chamber. A medium size Koch safety-burner is enclosed by a low base. Outside dimensions: 47 cm. wide, 36 cm. deep, and 65 cm. high exclusive of base. Height of low base 27 cm.  
 Complete with burner, thermometer and thermo-regulator ..... 100 00  
 If furnished with high base ..... 110 50
- \*6569/16—Incubator, Laboratory.** The smallest size which has the inner glass door. Capacity 4 test-tube baskets. Incubating chamber 30 cm. wide, 24 cm. deep, and 24 cm. high. It has a tray supported at a convenient height. With medium size Koch safety-burner. Outside dimensions: 47 cm. wide, 37 cm. deep, and 40 cm. high exclusive of base, which is 27 cm. high.  
 Complete with burner, thermometer, and thermo-regulator ..... 66 50

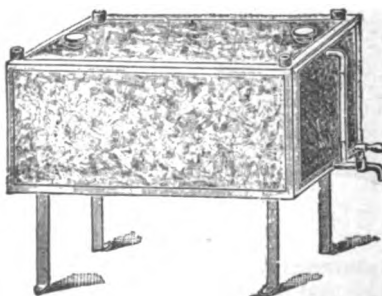
**REMEMBER OUR DISCOUNT.**



6569/14



6569/16



6569/17

- \*6569/17—Incubator, Koch's.** It has double lids, the inner one is of glass for observation of contents without exposing them to the outside air. The incubator is double walled, made of copper, tin-lined, and covered on the outside with a non-conducting and water-proof material. Tubulations for thermometer, thermo-regulator and filling are provided, also water-gauge, stop-cock and an enclosed base (not shown on illustration). Inside dimensions: 42 cm. long, 23 cm. wide, and 18 cm. deep.  
 Complete with burner, thermometer and thermo-regulator, and asbestos mat ..... 33 30

\*6569/18—**Incubator, Physicians'**, for making cultures. The incubating chamber is 32 cm. deep and 20 cm. in diameter. It is double walled and covered with a neat covering which is easily washed and requires no enameling. Tubulations for thermometer and thermo-regulator, water-gauge and stop-cock. The enclosed base is of sheet iron.

Only the Incubator.....

\$ 17 30

Incubator with thermometer, thermo-regulator, burner and asbestos mat Apparatus.....

23 65

6570—**Induction or Ruhmkorff Coils.** See Catalogue of Physical Apparatus.

\*6586—**Inhalers**, H. H. C. Co.'s, consisting of 250 cc. wide mouth bottle, rubber stopper, one glass-tube reaching to the bottom of bottle, one glass-tube for inhaling, and pouring cup; per doz., \$9 00; each.....

1 15

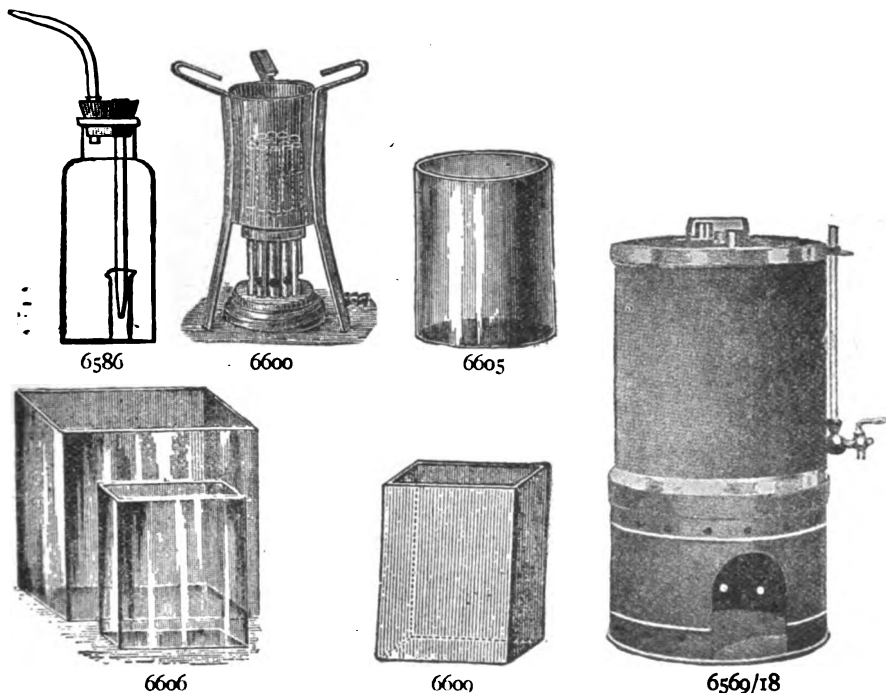
6592, etc.—**Instrument, Telegraph.** Private line instruments. See Catalogue of Physical Apparatus.

\*6600—**Jackets**, of iron, on tripod, for use with Bunsen's burners.

	small.	med.	lge.
Without burner.....	\$ 0 85	1 00	1 25

6601—Ditto, ditto, clay lined, large.....

2 50



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*6605—**Jars, Battery**, of glass, round.

Height	13 cm.	18 cm.	20 cm.	30 cm.	38 cm.
Width	10 cm.	12.7 cm.	15 cm.	20 cm.	23 cm.
Each	\$ 0 30	45	50	1 25	2 00
Per doz.	3 30	5 00	5 50	14 00	22 00

\*6606—**Jars, Battery**, of glass, square.

Height, 20 cm.; length, 23 cm.; width, 15 cm.; each.....

1 85

Height, 32 cm.; length, 28 cm.; width, 21 cm.; each.....

8 25

6607—Ditto, ditto. 38x140x152 mm. 60x127x165 mm.

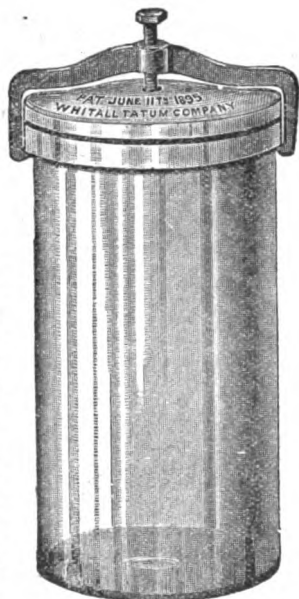
Each \$ 0 50 60

\*6609—**Jars, Battery**, of Hard Rubber, square.

Outside Dimensions:

No. 1—114 mm. deep x 35x 22 mm., 1 1/2 mm. shell; each.....	0 40
No. 2—114 " " x 80x 60 " 1 1/2 mm. " " .....	1 35
No. 3—89 " " x 51x 31 " 1 1/2 mm. " " .....	50
No. 4—165 " " x 63x 63 " 3 mm. " " .....	1 70
No. 5—133 " " x 66x 86 " 3 mm. " " .....	2 35
No. 6—152 " " x 108x108 " 3 mm. " " .....	2 85
No. 7—114 " " x 76x 76 " 3 mm. " " .....	1 50

\*6611—**Jars**, for preserving **anatomical preparations (Museum Jars)**; latest and most improved pattern, which can be closed air-tight by rubber band and clamp. They are without contraction at the neck, so that the width of the mouth is the same as the inside diameter of the body of the jar. On the bottom of the lid are two glass rings, from which specimens may be suspended so that they will stay in any position.



6611

Width of Mouth.	Height with- out lid.	Approximate Capacity.	Price Each.
5 7 cm.	10 cm.	240 cc.	\$0 50
5.7 cm.	15 cm.	350 cc.	55
5.7 cm.	20 cm.	475 cc.	61
5.7 cm.	30 cm.	710 cc.	70
5.7 cm.	45 cm.	1.1 lit.	87
9. cm.	15 cm.	825 cc.	89
9. cm.	20 cm.	1.2 lit.	1 00
9. cm.	30 cm.	1.9 lit.	1 13
9. cm.	45 cm.	2.85 lit.	1 39
12.7 cm.	20 cm.	2.6 lit.	1 56
12.7 cm.	30 cm.	3.8 lit.	1 74
12.7 cm.	38 cm.	4.75 lit.	1 91
12.7 cm.	45 cm.	5.7 lit.	2 13
16. cm.	20 cm.	3.75 lit.	2 00
16. cm.	30 cm.	5.7 lit.	2 26
19. cm.	15 cm.	4.2 lit.	2 78
19. cm.	20 cm.	5.7 lit.	2 95
19. cm.	30 cm.	8.5 lit.	3 47
19. cm.	38 cm.	10.4 lit.	3 73
19. cm.	45 cm.	13.25 lit.	4 08
19. cm.	60 cm.	17. lit.	4 68
19. cm.	90 cm.	26.5 lit.	8 24
29.5 cm.	30 cm.	18. lit.	9 88
29.5 cm.	45 cm.	27.5 lit.	12 40
29.5 cm.	60 cm.	38. lit.	14 82

REMEMBER OUR DISCOUNT.

\*6612—**Jars**, for preserving **Specimens**, made of clearest flint glass, with mouths nearly as wide as the jars themselves, and glass-stoppers carefully ground in. (Illustr. p. 291.)

Diameter of Body, in cm.	Height to Shoulder, in cm.	Height to Top of Stopper, in cm.	Width of Mouth, in cm.	Capacity to Neck, in cc.	Each.	Per Dozen.
3.8	5.	9.	3.1	45	\$0 29	\$3 10
3.8	7.6	11.4	3.1	75	30	3 25
5.	6.3	10.8	3.8	90	32	3 45
5.	9.5	14.	3.8	150	35	3 80
5.	12.7	17.1	3.8	180	41	4 35
6.3	8.9	14.	5.	240	43	4 65
6.3	12.7	17.8	5.	330	45	4 90
6.3	17.8	22.9	5.	475	51	5 45
7.6	10.1	15.9	6.3	420	55	6 00
7.6	15.25	21.	6.3	600	60	6 55
7.6	20.3	26.	6.3	830	71	7 65
9.5	15.25	21.6	7.6	860	78	8 45
9.5	20.3	26.6	7.6	1.18 in liters.	1 00	10 90
9.5	25.4	31.7	7.6	1.54	1 20	13 10
11.4	12.7	19.7	8.9	1.13	1 00	10 90
11.4	20.3	27.3	8.9	1.84	1 21	13 10
11.4	30.5	37.5	8.9	2.73	1 50	16 35
15.25	17.8	25.4	12.7	2.9	1 80	19 60
15.25	25.4	33.	12.7	4.15	2 31	25 10
15.25	30.5	38.	12.7	4.97	2 70	29 45
15.25	38.	45.7	12.7	6.28	3 10	33 80

\*6614—**Jars, Preservation**, of clear white glass with self-acting clamp. The cover is of glass, fitting air-tight by means of a rubber ring. (Illustr. p. 291.)

Capacity .....	120	240	280	440	660 cc.
Each .....	\$0 12½	13	16	20	27

**\*6615—Jars, Preservation**, of clear white glass, with glass cover fitting air-tight by means of a rubber ring and held in place by a metal screw-cap.

Approximate capacity .....	500	1000	2000 cc.
Per dozen .....	\$2 40	3 20	4 00

**\*6620—Jars, Decanting**, of porcelain, with tubulatures and knob handles, for washing precipitates. Capacity,

3	6	8 liters.
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\$ 4 35	5 00	7 50
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**\*6630—Ditto, Infusion, of Berlin porcelain**, with wooden handle.

250 cc.	500 cc.	1000 cc.
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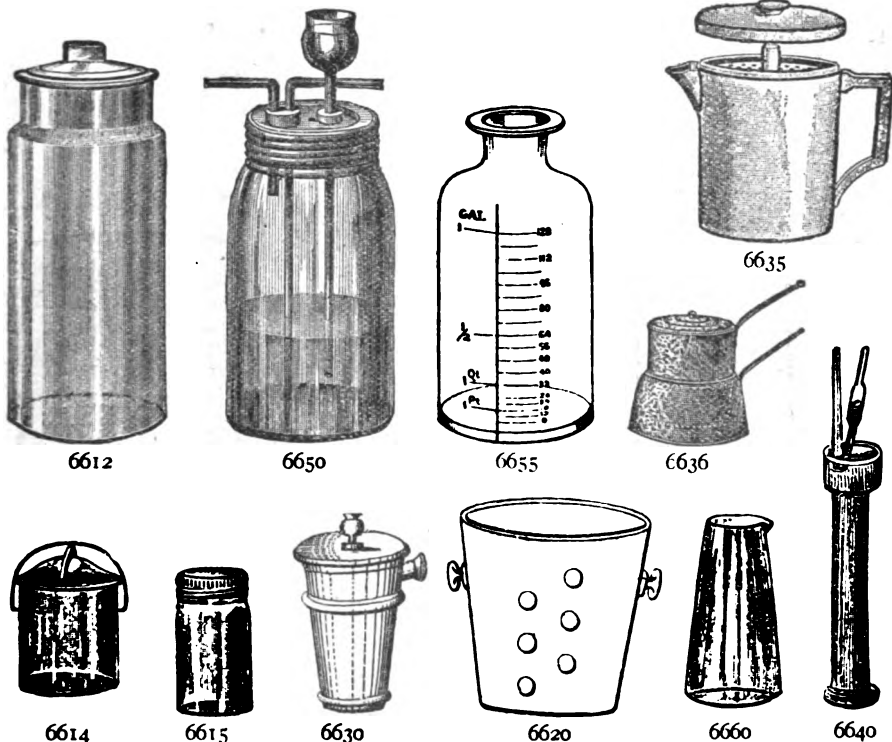
\$ 1 65	2 20	2 75
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**\*6635—Ditto, Infusion, of Berlin porcelain**, with porcelain handle and strainer.

250 cc.	500 cc.	1000 cc.
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\$ 1 25	2 00	2 75
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**\*6636—Jars, Infusion, iron, granite enameled.** (See Casseroles with water bath No. 4005/1 & 2).



**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

**\*6640—Jars, Mercury (only the Jar).** 36x3.5 cm. 40x4 cm. 45x4 cm.  
 \$ 0 50 69 94

**\*6650—Jars, Milville chemical**, consisting of a glass jar with a perforated glass lid, closed securely by means of a metal ring and rubber washer; with tubes, funnel-tube and rubber stoppers.

Approximate Capacity,	250cc.	500cc.	1 lit.	2 lit.
	\$ 1 00	1 00	1 05	1 25

**\*6655—Jars, Percolating, graduated in ounces to:**

qt.	½ gall.	1 gall.	2 gall.
\$ 1 25	1 85	2 80	4 40

**\*6656—Jars, Percolating, graduated in fractions of liters.**

1 liter	2 liters	4 liters	8 liters
Each..... \$1 50	2 15	3 40	5 00

**\*6660—Jar, Precipitating, of heavy glass.**

Approximate Capacity	125	250	500cc.	1 lit.	2 lit.	3.8 lit.	7.6 lit.	11.5 lit.
	\$0 20	30	52	67	95	1 65	3 80	5 95

For other Precipitating Jars, see No. 2960, etc.

**\*6669—Jars, Inverted Show Jars, for exhibition of chemicals, specimens etc.**

Approx. Capacity	125	250	500cc.	1 lit.	2 lit.	4 lit.	7.6 lit.	11.5 lit.
	\$0 17	20	27	40	67	1 33	2 00	4 00

**\*6670—Ditto, of glass, with glass covers.**

Approx. Cap.	250	500cc.	1lit.	2lit.	3lit.	4lit.	6lit.	7.6lit.	15lit.	19lit.	38lit.
	\$0 65	85	1 05	1 25	1 45	1 65	2 35	3 00	6 00	6 75	10 50

**\*6671—Ditto, of glass, in three sections.** 16.5x36.5 cm. 14x36.5 cm. 11.5x36.5 cm.  
\$3 00 2 40 1 90

**\*6680—Ditto, of glass (specie), with japanned tin covers.**

Approx. Capacity	250cc.	500cc.	1 lit.	2 lit.	4 lit.	7.6 lit.
	\$0 20	25	30	40	50	1 25

**\*6681—Ditto, of flint glass, with nickel-plated screw-top.**

Approx. Cap.	30 cc.	60 cc.	125 cc.	250 cc.	500 cc.	} Special price by gross.
Each	\$0 10	13	14	16	20	
Per doz.	1 10	1 35	1 50	1 80	2 25	

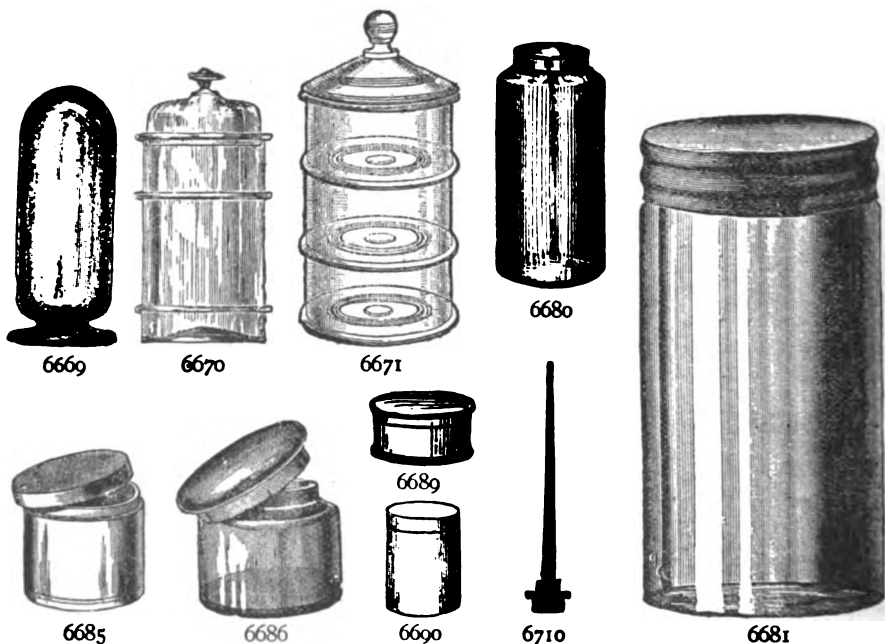
**\*6685—Ditto, of glass, with cover.**

Capacity	15 cc.	30 cc.	60 cc.	125 cc.	250 cc.	500 cc.
Each	\$0 12	14	20	25	35	50
Doz.	1 10	1 25	1 80	2 25	3 25	4 50

**\*6686—Ditto, ditto, with high hollow ground top, for Canada balsam, etc., 45cc.; each 22cts; per doz**

\$ 2 50

REMEMBER OUR DISCOUNT.



**\*6689—Ditto, of white earthenware, glazed, with cover.**

Capacity	15 cc.	30 cc.	60 cc.
Doz.	\$1 35	1 50	1 75

**\*6690—Ditto, of porcelain, with flat covers.**

Doz.	30cc.	60cc.	125cc.	250cc.	500cc.	1000cc.
	\$1 50	1 50	1 80	2 10	2 40	4 00

**6700—Ditto, of glazed earthenware, with covers, convenient for laboratory waste.**

Approx. Capacity	4 lit.	7.5 lit.	15 lit.	22.5 lit.	30 lit.
Each	\$0 60	95	1 20	1 50	1 75

**6701—Ditto, of glazed earthenware, with tubulature at bottom, and with cover.**

Approximate capacity	3.8 lit.	7.6 lit.	11.4 lit.	18.9 lit.	22.7 lit.
Each	\$0 75	1 05	1 40	1 75	2 00

**\*6710—Jet, of brass, for hydrogen, large**

90  
2 80

**6715—Jugs, stoneware, best make, with handle**

Each.....	3.8 lit.	7.6 lit.	11.4 lit.
Per doz.....	\$0 20	40	60
	2 25	4 50	6 75

**\*6716—Jugs, of gutta-percha, with stoppers, for acids, etc.**

Capacity	3.8	7.6	11.4	15.2	19	22.8	26.6	30.4 lit.
Each.....	\$15 00	25 00	32 50	40 00	46 50	53 00	60 00	66 50

**6726—Kettles, caldron shaped, of enameled iron.**

Capacity	08 lit.	150 lit.
Each.....	\$26 50	37 50

**\*6727—Kettles, of acid-proof stoneware, for melting Stearin, etc., with either flat or round bottom.**

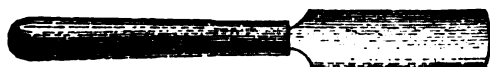
Approx. Cap.	23	46	76	95	114	152	170	190	210	247	266	285 lit.
Each.....	\$6 00	9 00	12 50	15 65	18 75	25 00	28 15	31 25	34 40	40 65	43 75	46 90

**ACID NITRIC CONC. C. P.**H N O<sub>3</sub>

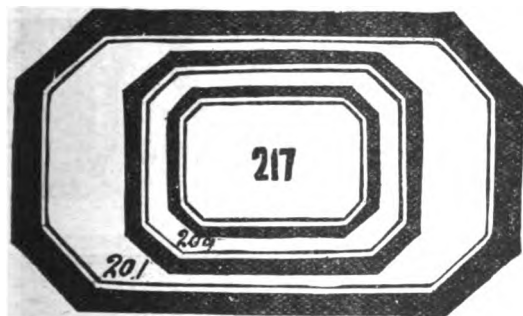
6735



6727



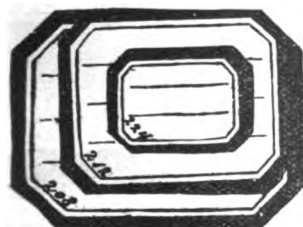
6730/1



6740



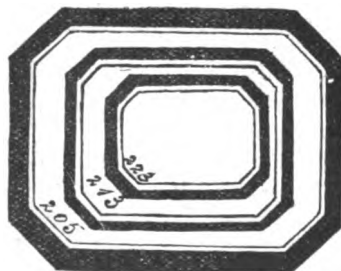
6716



6740



6740



6740

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*I 6730/1—Knives, for cutting glass-tubing: each..... \$ 94

6731—Knitting Needles. See Catalogue of Physical Apparatus.

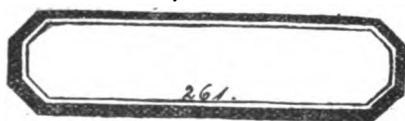
\*6735—Labels, chemical, of paper, strip form, gummed and perforated, with new nomenclature and symbols, very complete. Set..... 75

\*\*\*\*\*6740—Labels, Blank, of paper, gummed, No. 201, 205, 208, 209, 212, 213, 217, 219, 220, 223, 224, 229, 241, 259, 261, 263; per box 12 cts., per doz..... I 20

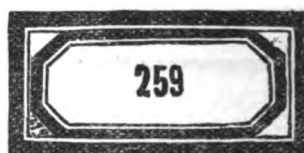
For other illustrations of No. 6740, see also page 294.

**All other numbers of these labels furnished at lowest prices.**

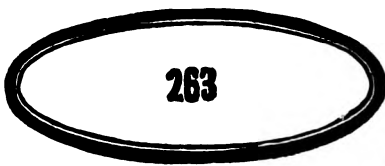
6750—Labels, of glass, black letters on white ground, with gold rim, very neat and legible. Each.....	\$ 0 27
*6755—Lactoscope, according to Prof. Feser, with pipette, complete in box.....	5 00
6755/1—Ditto, with metal base.....	5 75
*6760—Ladles, of iron, very heavy, with lip.	
7.5 10 12.5 15 cm.	
\$0 50 60 75 90	
*6765—Ditto, ditto, medium weight, with lip.	
7.5 10 12.5 15 cm.	
\$0 37 44 55 63	
*6766—Ladles, with detachable Handles. For use with the No. 5704 Ladle Furnace; of cast-iron. One handle will fit any ladle, and can be removed while it is on the fire.	
Ladle, 114x70 mm. inside, with handle.....	1 05
Ladle, 111x70 mm. inside, with handle.....	1 00
Ladle, 102x60 mm. inside, with handle.....	80
Without Handles, 40 cts. less.	
Handles, each.....	40



6740



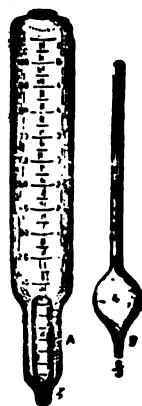
6740



6740



6740



6755



6770



6781



6760 &amp; 6765



6775



6780



6766

*6770—Lamps, Alcohol, of German glass, with ground glass cap, wick-holder and wick.	30 cc.	60 cc.	125 cc.	200 cc.	250 cc.
	\$0 35	40	45	55	63
*6775—Ditto, ditto, with tubulature and ground glass stopper.	60 cc.	125 cc.	250 cc.		
	\$0 55	65	75		
*6780—Ditto, ditto, of Bohemian glass, with ground cap, tubulature and ground glass stopper, cylindrical squat shape.	60 cc.	125 cc.	250 cc.		
	\$0 60	70	85		
*6781—Ditto, ditto, with ground glass cap and wick-holder.	60 cc.	125 cc.	250 cc.		
Each.....	\$0 30	45	60		
Per dozen.....	\$3 00	4 50	6 00		

REMEMBER OUR DISCOUNT.



\*6784—**Lamp, Alcohol, Clark's Patent.** They have nine facets on the font, so that they can be readily adjusted to any required position; with polished nickel trimmings. In use fill but one-third full.

Diameter of burner.....	5 mm.	7 mm.	12 mm.
Each.....	\$0 87	1 05	1 25

\*6785—Ditto, ditto, of polished brass.

60 cc.	125 cc.	250 cc.
\$0 35	50	62

\*6786—Ditto, ditto, of polished brass, with tin bottom, screw-top with flame regulator, handle and cap with chain; best alcohol-lamp made. Capacity, 180 cc.; per dozen, \$3.50. Each.....

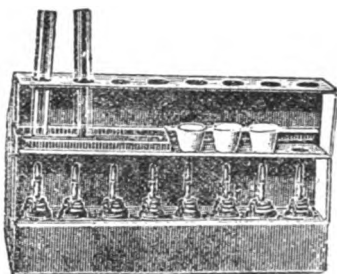
\$ 0 31



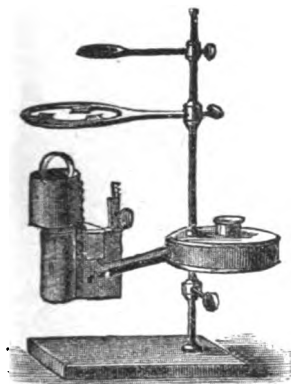
6786



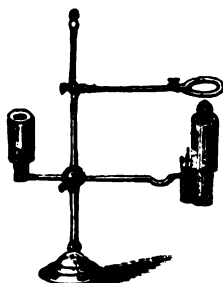
6784



6787/8



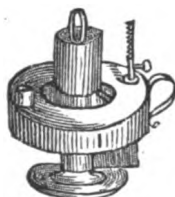
6800



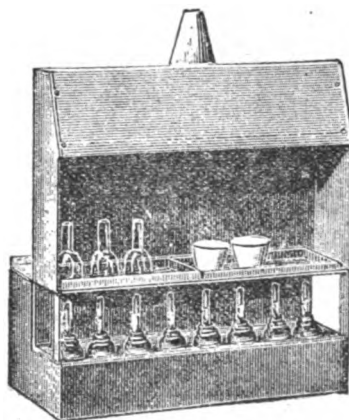
6795



6785



6790



6787

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*6787—**Lamps, Parting,** for alcohol, of galvanized iron, very strong, with shelf for sandbath and annealing cups, and with hood.

Each.....	6	8	12 burners.
	\$4 65	5 35	6 65

\*6787/8—Ditto, for alcohol, of galvanized iron, shelves for sandbath and annealing cups; upper shelf perforated for holding test-tubes.

Each.....	6	8	12 burners.
	\$4 00	4 65	6 00

\*6790—**Lamps, Alcohol, Berzelius',** of brass, with Argand burner.....

5 00

\*6795—Ditto, ditto, **Mitscherlich's,** of brass, with glass reservoir, 25 cm. distant from burner, with regulation of flow of alcohol.....

10 00

\*6800—Ditto, ditto, **Rose's form,** of brass with sliding rod, chimney, triangle and 2 brass rings; on polished mahogany base; the reservoir for the alcohol being distant from the burner, the former cannot become hot.....

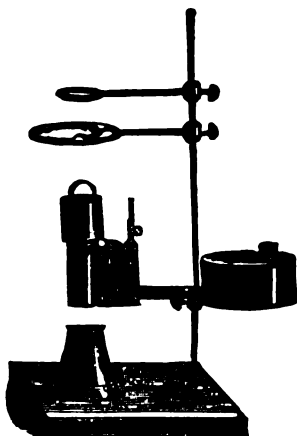
7 50

6801—Ditto, ditto, ditto, with porcelain base.....

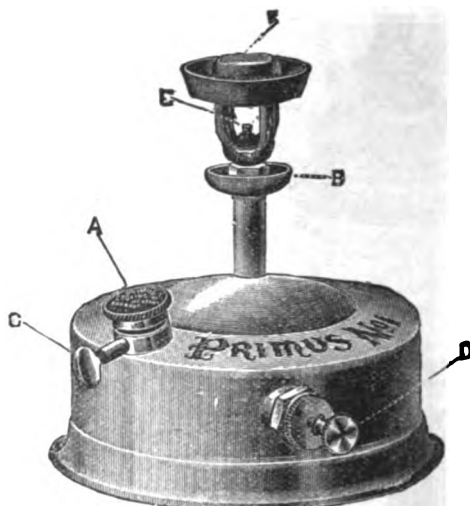
9 50

- \*6802—Lamps, Alcohol, Rose's form, of brass, Muller's modification, with mahogany base ..... \$ 8 15
- \*6805—Lamps, Alcohol, Luhme's, for decoctions and general laboratory work. Small. Large.  
\$8 75 10 25
- \*6806—Lamps, Kerosene, Primus No. 1, 18 & 181, to burn Kerosene without wick. No. .... 1 18 181  
Reservoir, approximately..... 1 liter 3 liters 4 liters.  
Price ..... \$6 00 7 50 9 15
- \*6806/1—Lamps, Kerosene, Primus No. 101 & 102, to burn Kerosene without wick; with cooking frame. Reservoir approximately 1 liter. The frame of No. 101 is japanned, of No. 102 of galvanized iron.  
No. .... 101 102  
Price ..... \$6 65 7 50

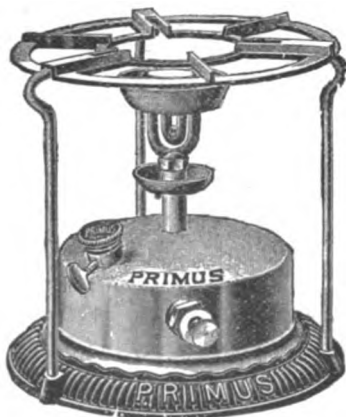
REMEMBER OUR DISCOUNT.



6802



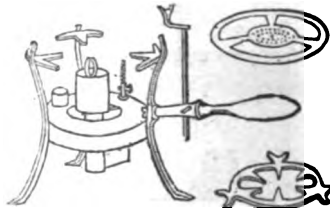
6806



6806/1



6811



6805



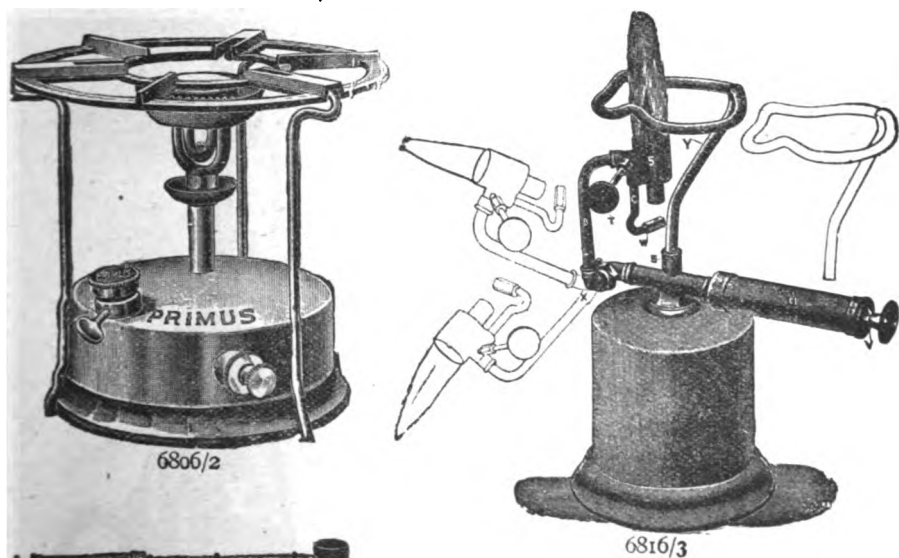
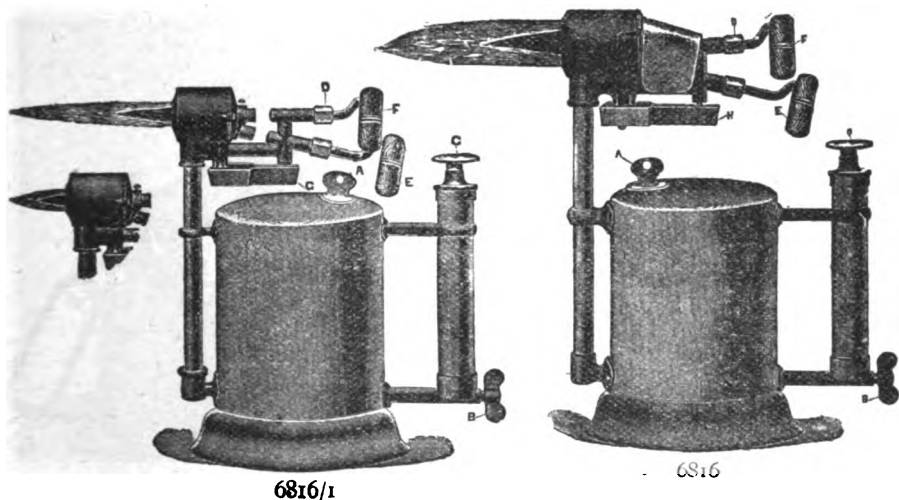
6815



6810

- \*6806/2—Lamp, Kerosene, Primus No. 103, to burn Kerosene without wick; with stationary cooking frame. Dimensions: Height 21 cm., diameter at top 22.2 cm., diameter at base 18 cm. (Illustr. p. 297)..... 6 25
- \*6810—Ditto, Blast, of copper, producing a horizontal jet of burning alcohol vapor ..... 4 00
- \*6811—Ditto, Blast, of copper, producing a horizontal jet of burning alcohol vapor ..... 3 10
- \*6815—Ditto, Russian Blast, of heavy copper, producing a jet of burning alcohol vapor. Med. Large.  
\$1 85 3 10

- \*6816—Lamps, Blast, for gasoline, No. 3, double jet, of polished brass; 1 liter, each..... \$ 8 30
- \*6816/1—Ditto, ditto, No. 4, double jet, of polished brass, 1 liter. The only difference between No. 6816/1 and 6816 is, that No. 6816/1 has a smaller burner; each..... 7 50



## APPROXIMATE EQUIVALENTS:

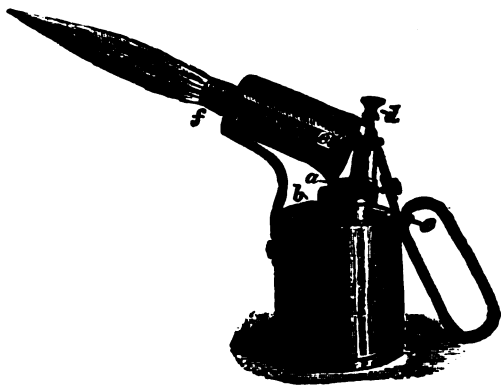
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=50 grm.

- \*6816/2—Ditto, ditto, "Jewel," brass, nickel-plated. Reservoir 5x6.3 cm. Capacity 240 cc. Weight 450 grammes; each..... 3 35
- \*6816/3—Ditto, ditto, "Laboratory," brass, nickel-plated. Reservoir 9x10 cm. Capacity 475 cc. Weight 900 grammes. Burner swiveled. Tripod removable; each..... 6 65

- \*6816/4—Lamps, Blast, "Reliable," No. 12, polished brass; each..... \$ 5 00
- \*6817—Lamps, Blast, for gasoline or benzine, Barthel's; absolutely safe, of excellent construction, very powerful. On swivel, so that it can be used at any angle. Highest temperature obtainable about 2000° Celsius. Weight 1.7 Kilos; each..... 11 25

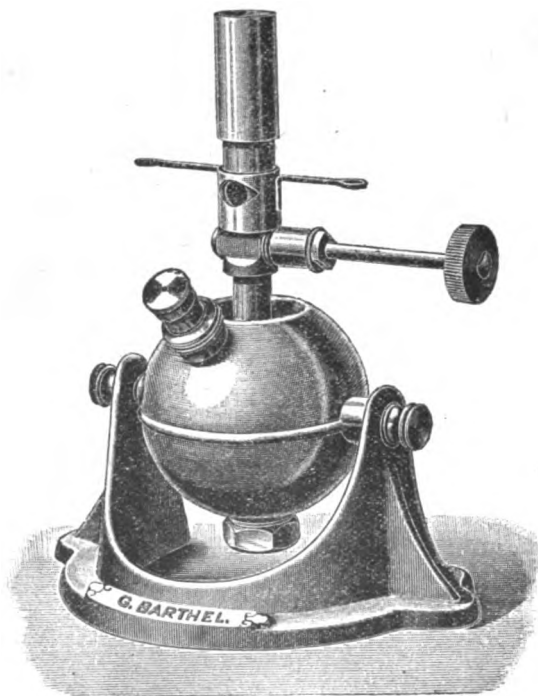


6816/4



6817/5

REMEMBER OUR DISCOUNT.



6817



6817/6

- \*6817/5—Lamps, Blast, for Kerosene, Primus No. 70.  
 Approximate Capacity..... 500 1000 cc.  
 Each..... \$7 50 9 15
- \*6817/6—Ditto, ditto, No. 72. Approximate Capacity 500 1000 cc.  
 Each..... \$7 50 9 15

**\*6817/7—Lamps, Blast, for Kerosene Primus, No. 74.**

Approximate Capacity.....	500	1000 cc.
Each.....	\$7 50	9 15

**6820—Lamps, Blow-pipe, Plattner's, of polished brass, on stand..... \$ 4 35**

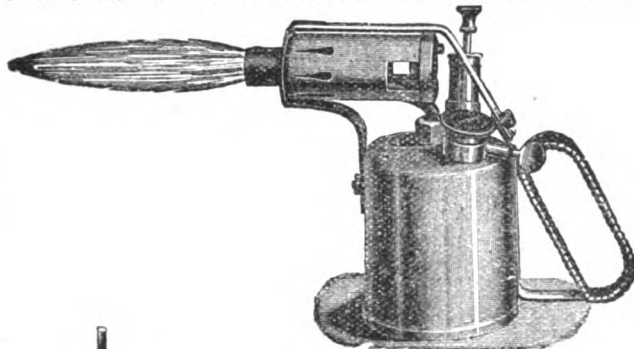
**\*6825—Ditto, ditto, ditto, nickel-plated, with patent swivel, without the holder and triangle.....**

**\*6830—Lamps, Blow-pipe, Fletcher's, of brass..... 5 30**

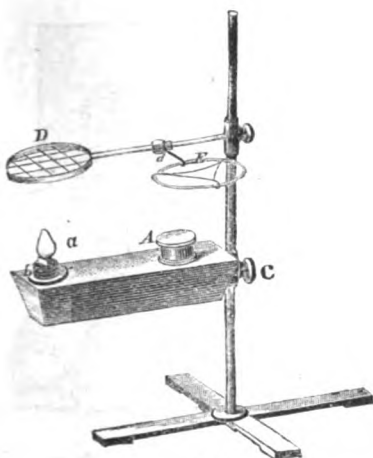
**\*6831—Ditto, ditto, ditto, nickel-plated..... 1 42**

**\*6832—Ditto, ditto, tin, for tallow or solid fat..... 1 75**

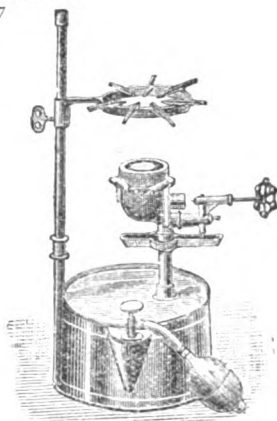
50



6817/7



6825



6837

**APPROXIMATE EQUIVALENTS:**

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

WICK HOLDER TURNED  
HALF A REVOLUTION.



WICK HOLDER END VIEW  
FULL SIZE SECTION.



6830 &amp; 6831



6832



6835

**\*6835—Lamps, Doebereiner's Hydrogen, best German make, for producing a light by throwing a jet of hydrogen on a platinum sponge. A neat glass jar with brass top and platinum sponge.**

No. 1	2	3	4
\$5 00	6 50	7 50	8 50

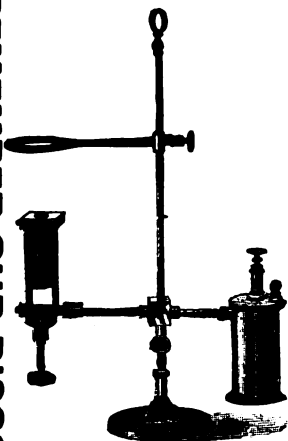
**6836—Lamps, Incandescent. See Catalogue of Physical Apparatus.**

**\*6837—Lamp, Laboratory, for gasoline, Dangler's, giving a more uniform and stronger heat than any gas-burner.....**

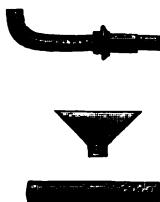
8 30

- \*6837/1—**Lamp, Hoskins' Improved Laboratory**, for gasoline. For all purposes in the laboratory, where Bunsen Burners, Alcohol Lamps or Blasts may be used, such as fusions in platinum crucibles, ignitions, evaporations, glass working, etc. The heat can be quickly controlled from that of a powerful blast to that of a Bunsen flame. The lamp is automatic and is made in a substantial manner from the best material. \$ 25 00
- \*6837/2—**Lamp, Hoskins' Laboratory Blast**, for gasoline. For the same uses as the foregoing. With three tubes for different size and shape of flame. The heat may be quickly controlled from that of a Blast Burner to that of the smallest Bunsen Flame. 16 65
- 6838—**Lamps, Magnesium**; used for burning magnesium; with clock-work and reflector. 41 50
- \*6839—**Lamps, Magnesium Flash** ..... 7 50  
**Lamps, Polariscopes**. See No. 7824/1, etc.
- \*6845/1—**Lamps, Safety, Davy's**, flat bottom, Iron Gauze and Iron Standards No. 4; each ..... 3 45
- 6845/2—**Ditto, Davy's**, narrow bottom, Iron Gauze and Iron Standards No. 10; each ..... 3 45
- 6845/3—**Ditto, Davy's Bosses'**, Iron Gauze and Iron Standards; each ..... 3 45
- 6845/4—**Ditto, Davy's Bosses'**, Copper Gauze and Brass Standards; each.... 5 25

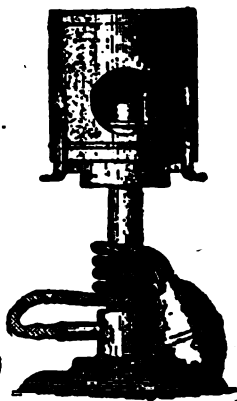
REMEMBER OUR DISCOUNT.



6837/1



6837/2



6839



6845/1



6845/6



6845/8



6845/9-12

- 6845/5—**Ditto, Everhart's Bosses'**, Iron Gauze and Iron Standards; each 3 45
- \*6845/6—**Ditto, Everhart's Bosses'**, Copper Gauze, all Brass; each ..... 5 25
- 6845/7—**Ditto, Ordinary Clanny**; each ..... 4 35
- \*6845/8—**Ditto, Ordinary Mueseler**; each ..... 4 35
- \*6845/9—**Ditto, Bull's-Eye**, Iron Gauze and Iron Standards, 57 mm. lens.... 6 00
- \*6845/10—**Ditto, Bull's-Eye**, Copper Gauze and Brass Standards, 57 mm. lens 6 75
- \*6845/11—**Ditto, Bull's-Eye**, Iron Gauze and Iron Standards, 76 mm. lens.. 7 50
- \*6845/12—**Ditto, Bull's-Eye**, Copper Gauze and Brass Standards, 76 mm. lens 8 25
- \*6851—**Lamps, Students'**, of brass, nickel-plated and handsomely finished, the best and most perfect coal oil lamp made. Large, with tin oil fount (Illust.p.301). With milk glass shade green shade.
- |            |         |         |
|------------|---------|---------|
| Each ..... | \$ 6 20 | \$ 6 90 |
| Per doz.   | 67 50   | 75 00   |
- \*6852—**Ditto, ditto, ditto, large**, with glass oil fount. (Illustr. p. 301.)
- |            |       |       |
|------------|-------|-------|
| Each ..... | 6 90  | 7 55  |
| Per doz.   | 75 00 | 82 50 |

\*6855/1—Lamp, Center, for the laboratory, called “Mammoth Lamp,” with No. 3 Rochester Chimney and Wick; for kerosene.

Brass, with 50 cm. Panel Reflector..... \$ 6 15

Nickel-plated, with 50 cm. Panel Reflector..... 6 70

\*6855/2—Ditto, ditto, “No. 70 Calcium,” with No. 2 Rochester Wick and Chimney.

Brass. Nickel-plated.

Each \$3 75 4 15

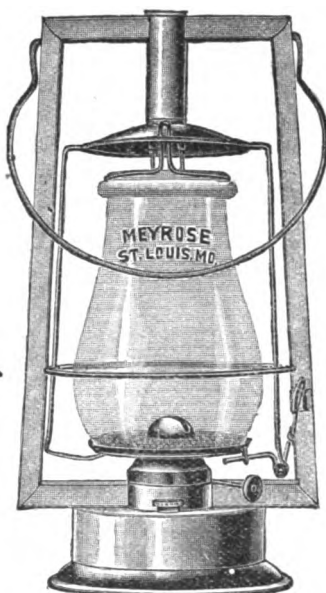
Lanterns, Magic. See Catalogue of Physical Apparatus.



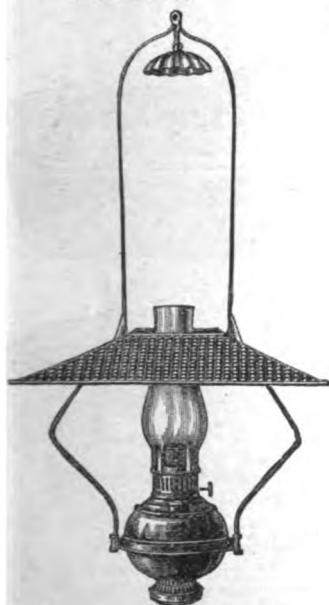
6851 & 6852



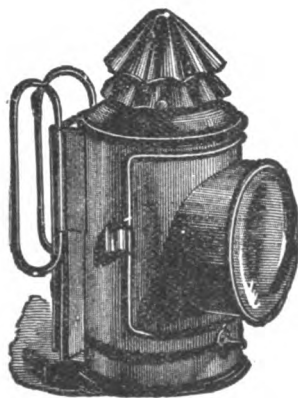
6855/1



6866/1



6855/2



6865/1



6870

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*6865—Lanterns, Bull's Eye, japanned.

	57 mm.	63 mm.	70 mm.	76 mm. lens.
Each.....	\$0 90	1 00	1 05	1 10
Per doz.	7 50	7 95	8 25	9 00

\*6866/1—Lantern, No. 0, Tubular. Each, \$1 00; per doz. 10 00

\*6870—Leech-Tubes, of glass, straight or bent.

	8	10	12 cm. long.
Each.....	\$0 08	09	10
Per doz.	70	75	90

\*6890—Level, strong brass frame, in tin case.

	75 mm.	150 mm.	230 mm. long.
Each.....	\$1 25	1 85	3 00

\*6891—Level, Pocket, mounted in brass, embossed and nickel-plated, 150 mm. long, each.....

\$ 2 50

\*6893—Ditto, ditto, mounted in iron, japanned. 75 mm. 125 mm. long.  
Each.....

\$ 0 40 55

\*6894—Level, Pocket, iron, japanned, small, with cast-iron top-plate. with brass top-plate.

Each..... \$ 0 35 50

\*6894/1—Level, Pocket, "Which Way." It is a most sensitive instrument, about the size of a dollar.....

1 65

6894/2—Level, brass, round, for bacteriological investigations, balances, etc. (See p. 63, No. 2169/5).....

2 80

\*6895—Level Glasses, 100 mm. 120 mm. 150 mm. long.  
Each.....

\$ 0 19 25 30



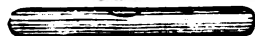
6891



6893



6894/1



6895



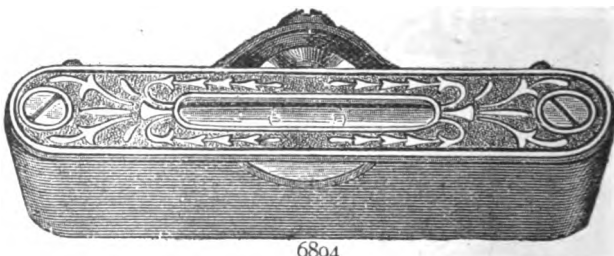
6902



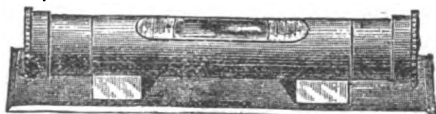
6900



6901



6894



6890



6898

6897—Leveling Screws, for balances, etc.

For	50	100	250	500	1000 gramme balance.
Per set	\$1 65	2 00	2 25	2 85	3 25

\*6898—Leveling Disc, of metal, for leveling hydrometer jars, etc.....

5 00.

6899—Lime Cylinders, best quality, for calcium light, in dozen packages only; per doz.....

2 50

\*6900—Liquor Thieves, of glass, plain, large.....

95

\*6901—Ditto, with brass ring. 60 75 cm.

\$1 45 1 75

\*6902—Ditto, of glass, with large bulb.....

1 00

Litmus Pencils. See No. 7509/7.

\*6906—Machine; Hunter's Improved Lightning Sifting and Mixing Machine, No. 00, for hand power. Capacity in flour, 7 kilos per minute. (Illustr. p. 303.)

With galvanized iron bottom.....

24 00

With enameled iron bottom.....

30 00

If made of hardwood, it will cost \$4 00 more.

If made with gear wheels, so that both Sifter and Mixer can be operated at once, it will cost \$4 00 more.

REMEMBER OUR DISCOUNT.



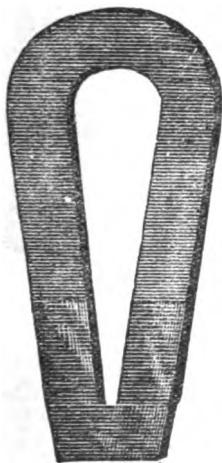
\*6907—**Machine, Hunter's Cyclone Emulsion.** Capacity of bowl, 10  
liters. Plain iron. Porcelain lined.  
\$10 00 14 00

\*6908—**Machine, Hunter's Pneumatic Emulsion.**  
No. 2—Single enameled iron tank. Capacity 12 liters..... \$ 27 50  
No. 3—Galvanized iron outside and planished copper inside tank.  
Capacity 12 liters..... 36 65  
No. 4—Cast-iron outside and planished or enameled inside tank.  
Capacity 18.5 liters..... 55 00  
No. 5—Galvanized iron outside and planished copper inside tank.  
Capacity 18.5 liters..... 55 00  
No. 5A—Same as No. 5. Capacity 26.5 liters..... 73 35

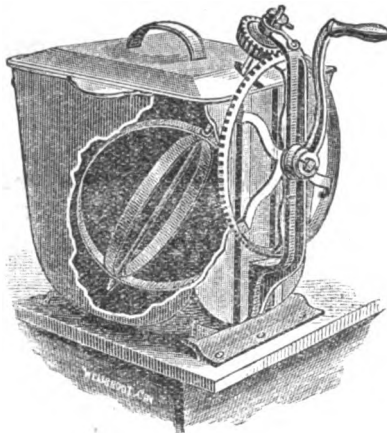
6919/3—**Machines for stirring, for laboratory use, of any design,  
made to order at lowest rates!**

6920 & 6921—**Magdeburg Hemispheres.** See Catalogue of Physical Ap-  
paratus.

6924, etc.—**Magic Lanterns.** See Catalogue of Physical Apparatus.



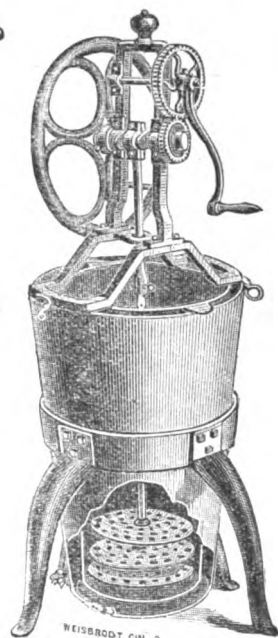
6940



6907



6931



6908



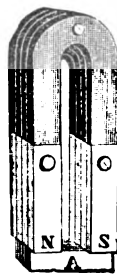
6906



6960



6950



6945

\*6931—**Magnet, Bar,** of best cast-steel.

	10	12	15	20	25 cm. long.
Each	\$0 30	35	45	50	60

\*6940—**Ditto, Horseshoe,** of best cast-steel, with keeper.

	5	8	10	12	15	20	25	30 cm. long.
Each	\$0 12½	15	20	31	44	1 12	2 20	2 80

\*6945—**Ditto, ditto, compound, four bars, very powerful.**

	10	12	15	20	25 cm. long.
Each	\$3 10	4 00	4 70	7 50	12 50

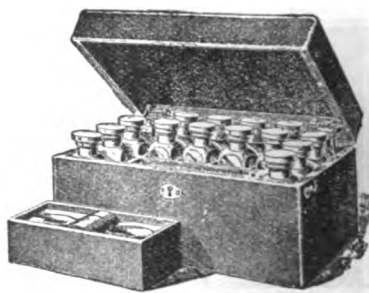
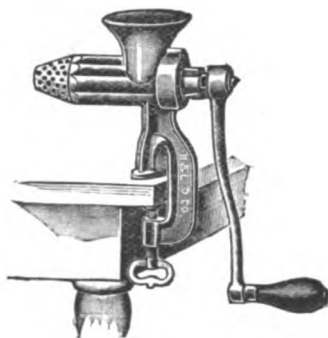
\*6950—**Mallet,** of hickory wood..... 60  
6950/1—**Mallet,** rawhide. best quality..... 1 35

6955, etc.—**Manometers.** See Catalogue of Physical Apparatus.

\*6960—**Matresses, small, of best German glass,** 9 cm. long, for blow-  
pipe use, superior make. Each 6cts; doz ..... 50

- \*6961—**Matrasses**, of hard Bohemian glass; each 12cts; doz ..... \$ 0 94
- \*6970—**Ditto, s. c. Boltheads, of infusible Bohemian glass, with extra long necks.**
- |      | 60cc.  | 125cc. | 250cc. | 500cc. | 1000cc. |
|------|--------|--------|--------|--------|---------|
| Each | \$1 05 | 1 30   | 1 55   | 1 80   | 2 15    |
- \*6980—**Measures, Tin.**
- |                      | 125    | 250  | 500cc. | 1 lit. | 2 lit. | 4 lit. |
|----------------------|--------|------|--------|--------|--------|--------|
| Approximate Capacity | 125    | 250  | 500cc. | 1 lit. | 2 lit. | 4 lit. |
| Each                 | \$0 15 | 20   | 25     | 30     | 40     | 60     |
| Per doz.             | 1 25   | 1 45 | 1 65   | 2 30   | 5 00   | 7 50   |
- \*6981—**Measures, Copper.**
- |                      | 125    | 250 | 500cc. | 1 lit. | 2 lit. | 4 lit. | 7.6 lit. |
|----------------------|--------|-----|--------|--------|--------|--------|----------|
| Approximate Capacity | 125    | 250 | 500cc. | 1 lit. | 2 lit. | 4 lit. | 7.6 lit. |
| Each                 | \$0 67 | 90  | 1 25   | 1 50   | 2 25   | 3 35   | 7 50     |
- \*6982—**Measures, standard straight, seamless, enameled like granite.**
- |                      | 125    | 250  | 500cc. | 1 lit. | 2 lit. | 4 lit. |
|----------------------|--------|------|--------|--------|--------|--------|
| Approximate Capacity | 125    | 250  | 500cc. | 1 lit. | 2 lit. | 4 lit. |
| Each                 | \$0 45 | 58   | 74     | 98     | 1 39   | 1 95   |
| Per doz.             | 4 86   | 6 26 | 8 00   | 10 60  | 15 00  | 21 05  |
- 6983—**Measures of lead, for acids.**
- |                      | 1 lit. | 2 lit. | 4 lit. | 8 lit. |
|----------------------|--------|--------|--------|--------|
| Approximate Capacity | 1 lit. | 2 lit. | 4 lit. | 8 lit. |
| Each                 | \$3 00 | 4 25   | 6 35   | 8 50   |
- \*6990—**Measure, for testlead, for blow-pipe use.** (60)
- Meat Presses. See Presses, Tincture, No. 7890.**
- \*6993—**Meat Choppers.** For macerating substances in making culture media. Capacity per minute 250 500 1000 1500 2000 grammes.
- |      | 250    | 500  | 1000 | 1500 | 2000 grammes. |
|------|--------|------|------|------|---------------|
| Each | \$2 10 | 2 50 | 3 30 | 4 60 | 6 65          |

REMEMBER OUR DISCOUNT.



6993

6996

- Meat Presses. See Presses, Tincture, No. 7890.**
- 6995—**Medicine Chest**, of cherry, handsomely polished, with nickel-plated top handle, hinges, lock and key. Outside dimensions 222 mm. long, 140 mm. wide and 120 mm. high. It contains ten 60 cc. square glass-stoppered bottles and two 30 cc. round blue bottles for poisons with diamond-pointed glass stoppers. It also has a compartment 127 mm. long, 38 mm. wide, and 57 mm. deep, over which rests a movable tray. Lid of chest padded.
- \*6996—**Ditto, ditto**, of mahogany, finely polished with gilt top handle, hinges, two end hooks, lock and key. Outside dimensions 260 mm. long, 177 mm. wide and 120 mm. high. It contains fourteen 60 cc. bottles and two 30 cc. round blue bottles for poisons, a tray with two 30 cc. glass ointment boxes with nickel-plated screw caps, one wood-cased graduated medicine glass, and two slide boxes of paste-board. The compartment for the tray is 152 mm. long, 76 mm. wide and 57 mm. deep. Lid of chest padded

4 15

6 65

\*6996/5—**Mercury Still**, according to Karsten, for producing pure mercury, with arrangement for purifying in nitric acid. Glass parts, \$18 35; complete on stand. \$ 30 00

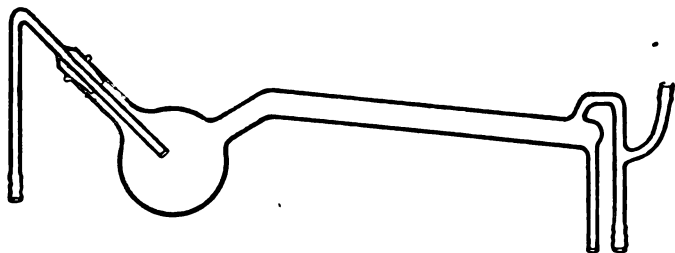
\*6996/6—Ditto, of simple construction. Can be fastened to any support and heated by any burner. Glass parts as shown. 9 15

\*7000—**Microscopes (Reading Glasses)**, with double convex lens, German silver frame and ebonized handle.

Diam.	50	62	75	89	100	112 mm.
Each..	\$0 75	1 00	1 25	1 65	2 50	3 10

\*7010—Ditto, (Magnifying Lenses), in hard rubber cases, with one double convex lens.

	19 mm	22 mm.	25 mm.
Each.....	\$0 33	42	50
Per doz.....	3 00	3 75	4 50



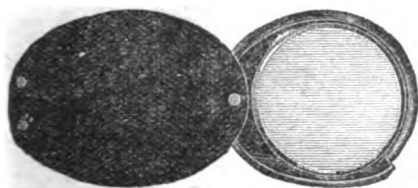
6996/6



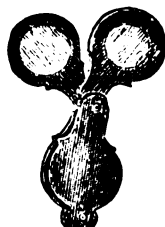
7000



7010



7011



7015



6996/5

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*7011—Ditto, ditto, ditto, **oval shape**, with one double convex lens.

	19 mm.	25 mm.	31 mm.	38 mm.	44 mm.
Each.....	\$0 33	50	67	83	1 00
Per doz.	3 00	4 50	6 00	7 50	9 00

\*7015—Ditto, ditto, ditto, with two double convex lenses.

	19 mm.	22 mm.	25 mm.
Each.....	\$0 58	67	83
Per doz.....	5 25	6 00	7 50

\*7016—Ditto, ditto, ditto, **oval shape**, with two double convex lenses. (Illustr. p. 306.)

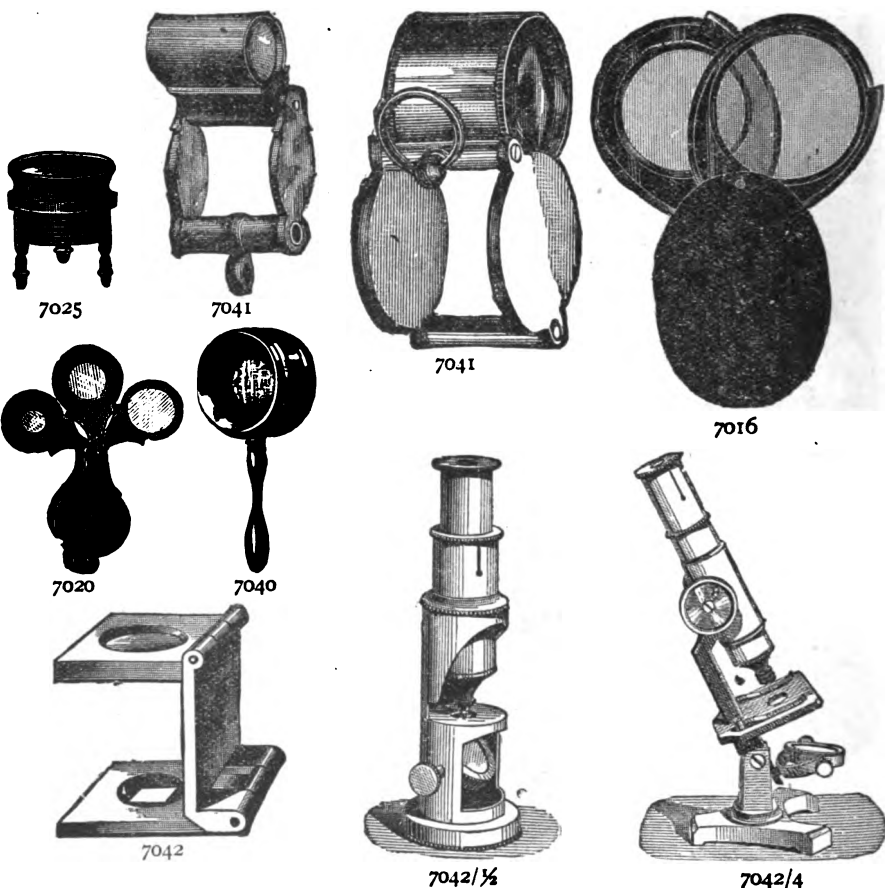
	19 mm.	25 mm.	31 mm.	38 mm.	44 mm.
Each.....	\$0 67	83	1 08	1 33	1 67
Per doz.	6 00	7 50	9 75	12 00	15 00

\*7020—Ditto, ditto, ditto, with three double convex lenses. (Illustr. p. 306.)

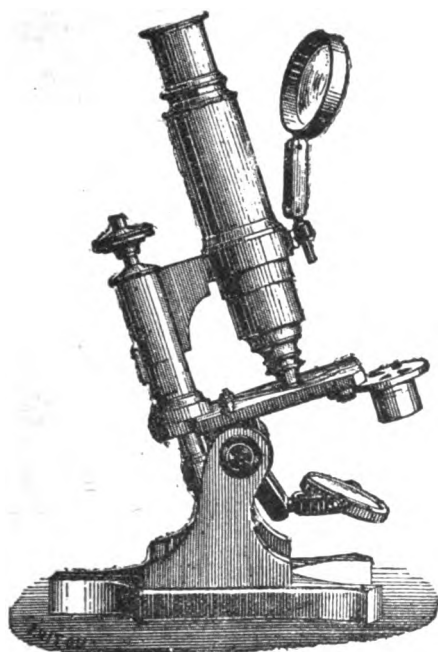
	19 mm.	22 mm.	25 mm.
Each.....	\$0 83	1 00	1 33
Per doz.	7 50	9 00	12 00

*7025—Microscopes (Magnifying Lenses), on three legs, in brass case, with screw adjustment for focus. Per doz. \$7 50; each .....	\$ 75
*7026—Ditto, ditto, ditto, nickel-plated .....	1 50
*7040—Ditto, ditto, in brass case, with handle, Coddington's, 15 25 mm. Each \$1 25 2 00	
*7041—Ditto, ditto, nickel-plated, with protecting covers, Coddington's. Diam. 13 mm. 19 mm. 25 mm. 28 mm. 31 mm. 34 mm. 40 mm. Each.. \$1 85 2 00 2 20 2 30 2 40 2 50 3 50	
*7042—Ditto, ditto, Pick Glasses, brass. Each, \$0 37½; per doz.....	3 75
*7042/½—Microscope, 1 Lens, Magnifying Power 25 diameters.....	3 30
7042/1—Ditto, 2 Lenses, Magnifying Power 40 diameters.....	4 05
7042/2—Ditto, 3 Lenses with Loupe. Magnifying Power 40 diameters .....	5 10
7042/3—Ditto, 3 Lenses, with joint for inclination. Magnifying Power 90 diameters .....	8 10

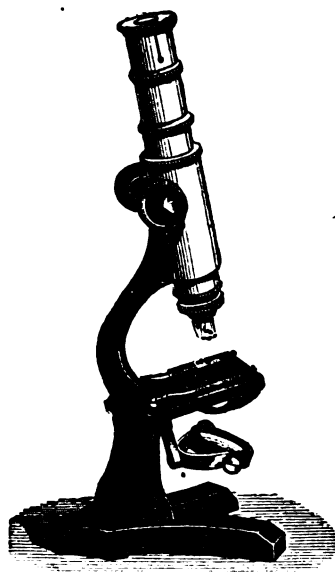
REMEMBER OUR DISCOUNT.



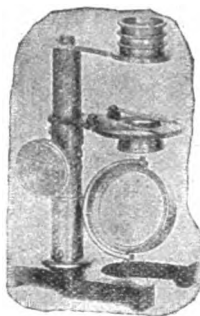
*7042/4—Ditto, 3 Lenses, with joint for inclination and eccentric adjustment. Magnifying Power 90 diameters.....	9 45
7042/5—Ditto. Same as No. 7042/4. Magnifying Power 110 diameters.....	11 15
7042/6—Ditto, 3 Lenses, Magnifying Power 110 diameters.....	10 70
7042/7—Ditto, 3 Lenses; rack adjustment. Magnifying Power 110 diameters .....	13 30
*7042/8—Ditto, 3 Lenses; jointed rack adjustment, with Loupe. Magnifying Power 150 diameters. (Illustr. p. 307.).....	21 85
7042/9—Ditto, 3 Lenses; joint for inclination, with Loupe. Magnifying Power 140 diameters.....	24 75
7042/10—Ditto, 3 Lenses, 1 eye-piece, achromatic; rack adjustment. Magnifying Power 200 diameters.....	30 85
7042/11—Ditto, 3 Eye-pieces, rack adjustment, with Loupe, achromatic. Magnifying Power 350 to 480 diameters.....	37 25



7042/13



7042/8



7042/12

\*7042/12—**Microscope, 3 Lenses; upright rack.** Magnifying Power 20 diameters

\$ 8 10

\*7042/13—**Microscope. French Institut d'Optique Microscope.**

This is a justly famous stand, constructed on entirely new lines, 28 cm. in height when closed, ready for packing in the case which accompanies it; it can be extended by means of the rack and pinion and a **draw tube** to 35.5 cm. in height, giving a long focus and making high powers possible. The whole is placed on a heavy brass stand, insuring perfect rigidity.

The joints are all constructed in the most approved manner, this also adding to the rigidity of the instrument, and all the other parts of heavy brass, insure solidity second to no microscope heretofore made. The focus is reached, when using the lower power eyepiece, by the rack and pinion adjustment, and a micrometer screw, moving without friction, insures the very finest focus. The higher powers require the use of the draw tube. This instrument is furnished with a dividing objective and two eyepieces, numbered 2 and 5. With the No. 2 eyepiece and the draw tube, 380 diameters, and without the draw tube, 210 diameters are obtained. With the No. 5 eyepiece and the draw tube, 1000 diameters, and without the draw tube, 600 diameters are obtained. The instrument also has a condenser (removable), attached as shown in cut, or to the stage as desired.

Complete in polished mahogany case.....  
With Abbey Condenser, in mahogany case.....

83 80  
108 30

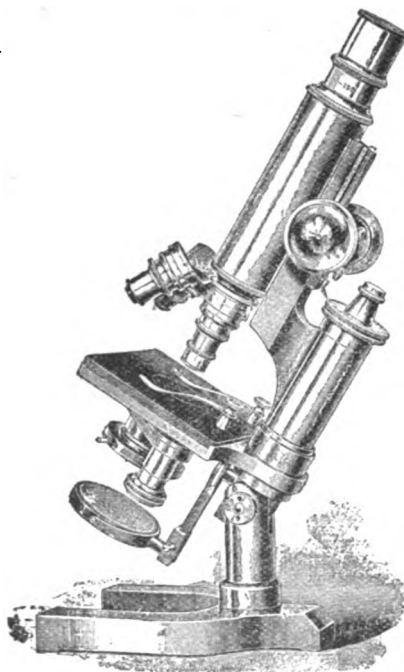
**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

## MICROSCOPES.

MANUFACTURED BY THE SPENCER LENS CO., BUFFALO, N. Y.  
THEY ARE THE BEST MICROSCOPE MANUFACTURED  
IN AMERICA.

\*7043—Microscope, Spencer Lens Co's.

REMEMBER OUR DISCOUNT.



7043

**Stand No. 1.** The entire stand, of brass throughout, is polished and elegantly finished in the finest possible manner. It is graceful and of convenient height for the eye. The base is of ample size, lead-filled for greater stability. It is supplied in either horse-shoe or Y shape, as desired. The stage of metal, faced with hard rubber, size 10cm. by 8cm. Provided with an extra Iris Diaphragm above the Substage Ring, which may be raised or lowered to work at or near the plane of the stage, and which is fitted with an automatic device for locking the upper Iris Diaphragm when the Abbe Condenser is in its highest position, with its front lens projecting through the diaphragm mounting. Conversely, when the Condenser has been lowered and the upper Iris is partly or fully closed, the Condenser is automatically locked out and cannot be raised till the upper Diaphragm is fully opened. This invention, which is original with the Spencer Lens Co., will be appreciated by those who have used the ordinary Screw Substage as furnished on other microscopes. The Sextuple Screw of the Substage is protected from dust by an embracing sleeve within which it works freely, **furnished when especially ordered at a slight extra cost.** The condenser may be easily swung aside and the light can be modified by using the upper adjustable Iris Diaphragm, which remains in position and may be raised or lowered. The condenser remains in its holder and may be swung back into place instantly. The mirrors have very large range of motion. The focal length of the concave Mirror accurately adapted. Fine adjustment by Micrometer Screw with graduated head. Coarse adjustment by diagonal rack and pinion. Body and Draw-tube of ample size. The Draw-tube is cloth-lined, nickel-plated and graduated in millimeters, and provided with Society Screw. Continental Eye-pieces of any power desired.

The Microscopes can also be furnished with round revolving centering Stage, plain metal, at an additional cost of \$30.00, and faced with hard rubber at an additional cost of \$33.30.

**Prices Include Polished Hardwood Cabinet with Lock and Key.**

Stand No. 1A, with 1 Eye-piece, $\frac{2}{3}$ in. and $\frac{1}{4}$ in. Objectives.....	\$ 88 00
Stand No. 1B. Same as No. 1A, with double Nose-piece.....	96 30
Stand No. 1C, with 2 Eye-pieces, $\frac{2}{3}$ in. and $\frac{1}{4}$ in. (par focal) Objectives, with Iris Diaphragm on Substage.....	91 65
Stand No. 1D. Same as No. 1C, with double Nose-piece.....	100 00
Stand No. 1E, with 2 Eye-pieces, 2 in., $\frac{2}{3}$ in. and $\frac{1}{4}$ in. Objectives, with Iris Diaphragm on Substage.....	102 65
Stand No. 1F. Same as Stand No. 1E, with triple Nose-piece.....	115 15
Stand No. 1G, with 2 Eye-pieces, $\frac{2}{3}$ in. and $\frac{1}{4}$ in. dry, and $\frac{1}{4}$ in. oil-immersion Objectives (par focal), Abbe Condenser with Iris Diaphragm, also with Iris Diaphragm on Substage.....	160 40
Stand No. 1H. Same as No. 1G, with triple Nose-piece.....	172 90

The  $\frac{1}{4}$  in. Objective will be supplied in place of the  $\frac{1}{4}$  in. if desired.

## \*7043/1—Microscope, Spencer Lens Co's.

**Stand No. 2.** For general science work in College and High School Laboratories. The Spencer Stand No. 2 meets the special requirements of educational institutions for a high grade microscope of fine construction and finish at a very moderate cost.

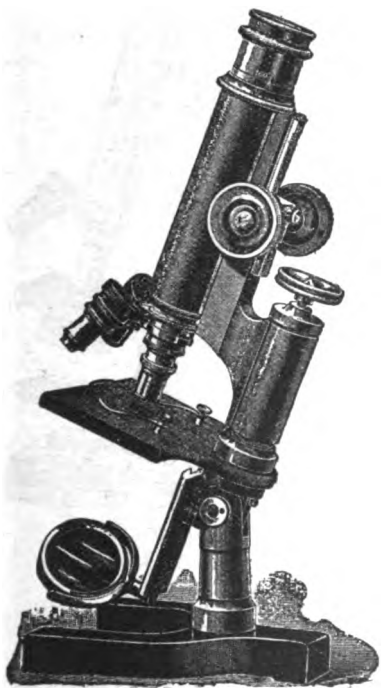
It is made of brass, polished and lacquered, except the base, which is of japanned iron. The Stage is brass with dull black finish. Height 30½ cm. Stout Brass pillar, lacquered, with hinged joint for inclination. Stage 10x8 cm., furnished with spring clips and with revolving Diaphragm, having four apertures of different sizes, fitted to its under surface. It is provided with plain and concave Mirrors, with double motion, sliding upon a swinging arm with a range of motion which permits of using the Mirror for top illumination. Tubes and adjustments are the same as No. 1 and No. 4 Stands. Fine adjustment by Micrometer Screw. Coarse adjustment by diagonal rack and pinion. Draw-tube nickel-plated and fitted with society screw. Continental Eye-pieces of any desired power. In polished hardwood cabinet with lock and key.

Stand No. 2A, with 1 Eye-piece, $\frac{3}{4}$ in. and $\frac{1}{2}$ in. Objectives.....	\$ 70 80
Stand No. 2B. Same as No. 2A, with double Nose-piece.....	79 15
Stand No. 2C, with 2 Eye-pieces, $\frac{3}{4}$ in. and $\frac{1}{2}$ in. Objectives.....	74 15
Stand No. 2D. Same as No. 2C, with double Nose-piece.....	82 50
Stand No. 2E, with 2 Eye-pieces, 2 in., $\frac{3}{4}$ in. and $\frac{1}{2}$ in. Objectives.....	82 50
Stand No. 2F. Same as No. 2E, with triple Nose-piece.....	95 00

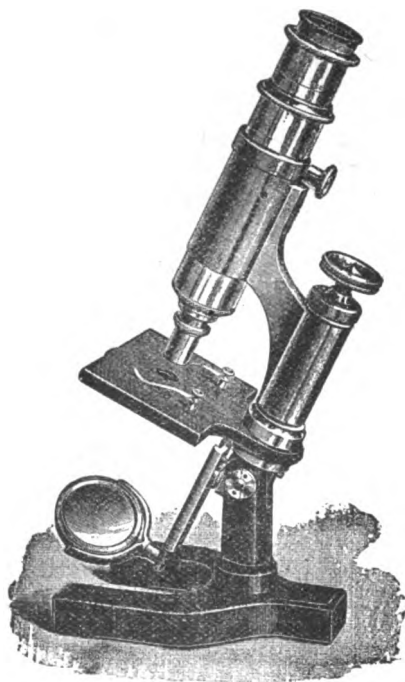
We also furnish this Stand with Quick Screw Substage in protecting sleeve equipped, when desired, with Abbe Condenser and Iris Diaphragm.

## APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



7043/1



7043/2

## \*7043/2—Microscope, Spencer Lens Co's.

**Stand No. 3.** This very neat and tasteful instrument is especially commended to those who desire a superior microscope adapted for the best work, but at a low cost. It is peculiarly suited for botanical and biological work, and for the general requirements of schools and academies. The same care is bestowed upon the construction and finish, as in the case of the more expensive stands.

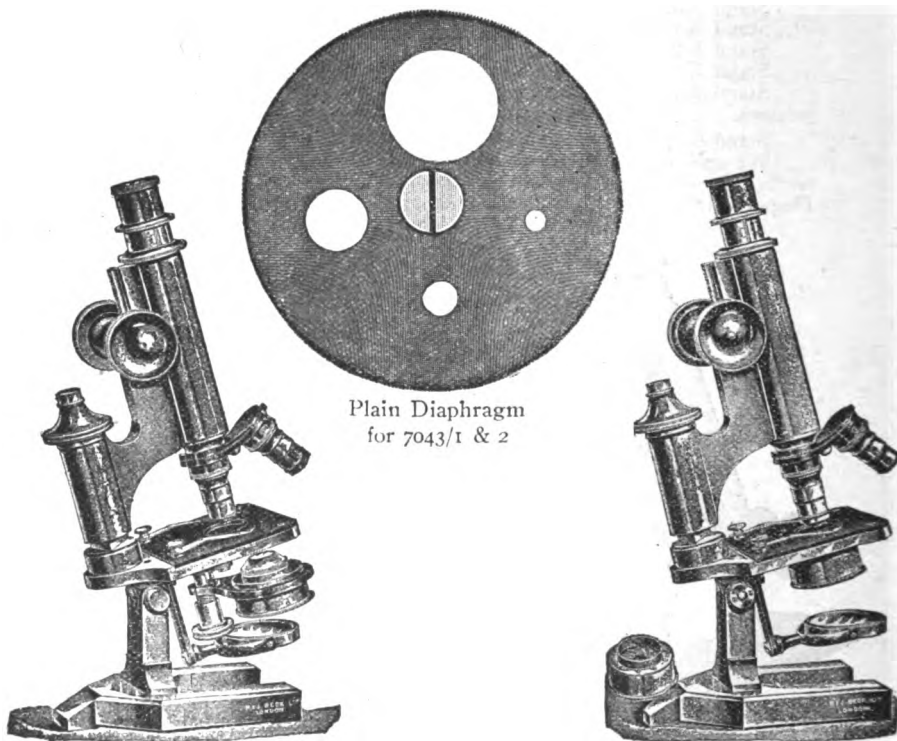
\*7043/2—**Microscope, Spencer Lens Co.'s. Stand No. 3** (continued).

The horseshoe base and pillar are japanned and very smoothly finished. The stout pillar and hinged joint for inclination are the same as in the higher priced stands. Brass Stage, dead black finish, fitted with revolving Diaphragm having four apertures of different sizes. Plane and concave Mirrors with double motion, sliding in a swinging arm of suitable length to permit use of Mirror for top illumination when desired. Fine adjustment by Micrometer Screw. Coarse adjustment by nickel-plated Sliding Tube, carefully fitted in a cloth-lined tube provided with clamping ring and screw, so that it can be firmly held whenever desired, Nickel-plated Draw-tube. Other parts finely polished and lacquered. In hardwood cabinet with lock and key.

Stand No. 3A, with 1 Eye-piece, $\frac{3}{4}$ in. and $\frac{1}{4}$ in. Objectives.....	\$ 62 50
Stand No. 3B. Same as No. 3A, with double Nose-piece .....	70 80
Stand No. 3C, with 2 Eye-pieces, $\frac{3}{4}$ in. and $\frac{1}{4}$ in. Objectives.....	65 80
Stand No. 3D. Same as No. 3B, with double Nose-piece.....	74 15

We shall be glad to quote upon any other combination of Objectives and Eye-pieces.

REMEMBER OUR DISCOUNT.



Plain Diaphragm  
for 7043/1 & 2

7044/1 No. 1129K

7044 No. 1125J

\*7044—**Microscope. New Continental Microscope No. 1125.**

The New Continental Microscope has spiral rack and pinion coarse adjustment, micrometer screw fine adjustment, inclining joint, draw-tube with millimeter scale, swinging double mirror, Iris diaphragm, rubber top stage, in polished mahogany case. This instrument is finely finished in bright lacquer. The stage is large, and has heavy rubber top-stage for resisting the action of alcohol, acids, etc. The base is of the regular Continental type, exceedingly rigid, and filled with lead so as to give increased stability to the stand. Nothing has been omitted to make this instrument the most perfect that can possibly be made at any price. Stand No. 7044 and 7044/1 are of standard Continental size; stands No. 7044/2 and 3 are extra large, but otherwise are the same design. Any combination of objectives, condensers, or accessories can be made to suit the preference of the purchaser.

**1125F New Continental Microscope Stand only, in case,**  
with two eye-pieces, Nos. I and II, and Iris diaphragm....

50 00



**\*7044—Microscope. New Continental No. 1123 (continued).**

**1125G New Continental Microscope**, in case, with  
 1 eye-piece, No. I or No. II.  
 251 1 inch (22 mm.) objective.  
 253  $\frac{1}{4}$  inch (6 mm.) "  
 Iris diaphragm.  
 Magnifying power from 59 to 350..... \$ 75 00

**1125H New Continental Microscope**, in case, with  
 1 eye-piece, No. I or No. II.  
 252  $\frac{3}{8}$  inch (14 mm.) objective.  
 254  $\frac{1}{4}$  inch (4 mm.) "  
 or 255  $\frac{1}{8}$  inch (3 mm.) "  
 Iris diaphragm.  
 Magnifying power from 82 to 600..... 78 35

**\*1125J New Continental Microscope**, in case, with  
 1 eye-piece, No. I or No. II. (Illustr. p. 310 )  
 252  $\frac{3}{8}$  inch (14 mm.) objective.  
 254  $\frac{1}{4}$  inch (4 mm.) "  
 or 255  $\frac{1}{8}$  inch (3 mm.) "  
 Double nose-piece.  
 Abbe condenser and Iris diaphragm.  
 Magnifying power from 82 to 600..... 91 65

**1125N New Continental Microscope**, in case, with  
 2 eye-pieces, Nos. I and II.  
 252  $\frac{3}{8}$  inch (14 mm) objective.  
 254  $\frac{1}{4}$  inch (4 mm.) "  
 or 255  $\frac{1}{8}$  inch (3 mm.) "  
 258  $\frac{1}{8}$  inch (2 mm.) Oil Immersion objective.  
 Abbe condenser and Iris diaphragm.  
 Dust-tight triple nose-piece.  
 Magnifying power from 82 to 1000..... 150 00

**\*7044/1—Microscope. New Continental Microscope No. 1129.**  
 This instrument is exactly like No. 7044, but has a swinging out, and spiral focusing substage in place of plain tube fitting. (Illustr. p. 310.)

**1129 New Continental Microscope Stand only**, with two eye-pieces, Nos. I and II, Iris diaphragm, in mahogany case, no objectives or nose-piece ..... 62 50

**1129H New Continental Microscope**, in case, with  
 2 eye-pieces, Nos. I and II.  
 251 1 inch (22 mm.) objective.  
 253  $\frac{1}{4}$  inch (6 mm.) "  
 Abbe condenser and Iris diaphragm.  
 Magnifying power 38.5 to 250..... 93 35

**\*1129K New Continental Microscope**, in case, with  
 2 eye-pieces, Nos. I and II. (Illustr. p. 310.)  
 252  $\frac{3}{8}$  inch (14 mm.) objective.  
 254  $\frac{1}{4}$  inch (4 mm.) "  
 or 255  $\frac{1}{8}$  inch (3 mm.) "  
 Abbe condenser and Iris diaphragm.  
 Double nose-piece.  
 Magnifying power from 54 to 600..... 103 35

**1129L New Continental Microscope**, in case, with  
 2 eye-pieces, Nos. I and II.  
 151 1 inch (22 mm.) objective.  
 253  $\frac{1}{4}$  inch (6 mm.) "  
 258  $\frac{1}{8}$  inch (2 mm.) Oil Immersion objective.  
 Abbe condenser and Iris diaphragm.  
 Dust-tight triple nose-piece.  
 Magnifying power from 38.5 to 1000..... 157 50

**1129P New Continental Microscope**, in case, with  
 2 eye-pieces, Nos. I and II.  
 252  $\frac{3}{8}$  inch (14 mm.) objective.  
 254  $\frac{1}{4}$  inch (4 mm.) "  
 or 255  $\frac{1}{8}$  inch (3 mm.) "  
 258  $\frac{1}{8}$  inch (2 mm.) Oil Immersion objective.  
 Abbe condenser and Iris diaphragm.  
 Dust-tight triple nose-piece.  
 Magnifying power from 54 to 1000..... 161 65

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

**\*7044/2—Microscope. New Continental Microscope No. 1153.** This instrument is a large model of No. 7044/1. The stage is 10x10 cm., with base and pillar in proportion. It has a clamp to the inclining joint, a large divided milled head to the slow motion, with folding indicator and a sliding adjustment to vary the distance of the mirror from the stage.

**1153 New Continental Microscope Stand only, in mahogany case with two eye pieces, Nos. I and II, no objectives, condenser or nose piece**..... \$ 81 65

**1153J New Continental Microscope, in case with 2 eye pieces, Nos. I and II.**

251 1 inch (22 mm.) objective.

253  $\frac{1}{4}$  inch (6 mm.) " "

Abbe condenser with Iris diaphragm.

Magnifying power from 38.5 to 350..... 129 15

**1153K New Continental Microscope, in case, with 2 eye pieces, Nos. I and II.**

252  $\frac{2}{3}$  inch (14 mm.) objective.

254  $\frac{1}{2}$  inch (4 mm.) " "

or 255  $\frac{1}{4}$  inch (3 mm.) " "

Abbe condenser with Iris diaphragm.

Double nose piece.

Magnifying power from 54 to 600..... 141 65

**\*1153N New Continental Microscope, in case, with 3 eye pieces, Nos. I, II and III.**

252  $\frac{2}{3}$  inch (14 mm.) objective.

254  $\frac{1}{2}$  inch (4 mm.) " "

or 255  $\frac{1}{4}$  inch (3 mm.) " "

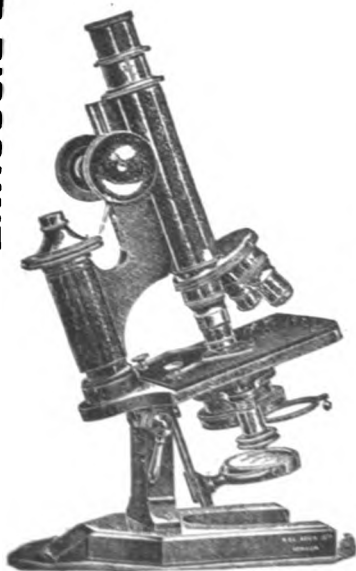
258  $\frac{1}{8}$  inch (2 mm.) Oil Immersion objective.

Abbe condenser with Iris diaphragm.

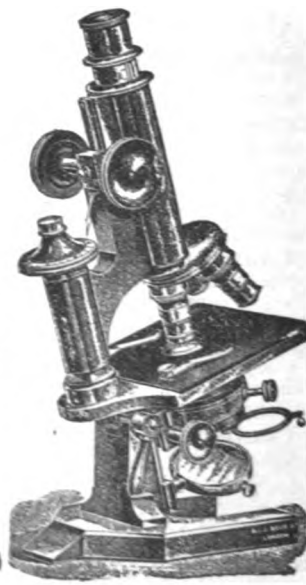
Dust-tight triple nose piece.

Magnifying power from 54 to 1650..... 208 30

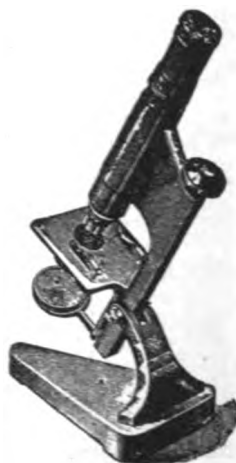
REMEMBER OUR DISCOUNT.



7044/2 No. 1153N



7044/3 No. 1152P



7044/4 No. 100

**\*7044/3—Microscope. New Continental Microscope No. 1152.** This instrument is the same as No. 7044/2 except that it has a rack and pinion focusing substage with centering adjustments.

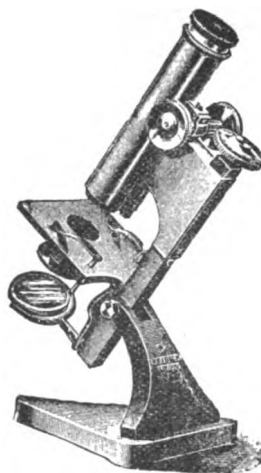
**1152 New Continental Microscope Stand only, in mahogany case, with two eye pieces, Nos. I and II, no objectives, condenser or nose piece**..... 100 00

**\*7044/3—Microscope. New Continental No. 1152. (Continued.)**

<b>1152K</b>	<b>New Continental Microscope</b> , in case, with 2 eye pieces, Nos. I and II. 252 $\frac{3}{8}$ inch (14 mm.) objective. 254 $\frac{1}{2}$ inch (4 mm.) " " or 255 $\frac{1}{4}$ inch (3 mm.) " " Abbe condenser with Iris diaphragm. Double nose piece. Magnifying power from 54 to 600.....	\$ 162 50
<b>*1152P</b>	<b>New Continental Microscope</b> , in case, with 3 eye pieces, Nos. I, II and III. (Illustr. p. 312.) 251 1 inch (22 mm.) objective. 252A $\frac{1}{2}$ inch (12 mm.) " " 254 $\frac{1}{4}$ inch (4 mm.) " " or 255 $\frac{1}{8}$ inch (3 mm.) " " 258 $\frac{1}{8}$ inch (2 mm.) Oil Immersion objective. Beck's achromatic condenser. Dust-tight triple nose piece. Magnifying power from 38.5 to 1650.....	266 55
<b>1152Q</b>	<b>New Continental Microscope</b> , in case, with 3 eye pieces, Nos. I, II and III. 260 2 inch (40 mm.) objective. Best series. 262 1 inch (22 mm.) " " " 264 $\frac{1}{2}$ inch (12 mm.) " " " 266 $\frac{1}{4}$ inch (4 mm.) " " " with correction collar. Best Series. 267 $\frac{1}{8}$ inch (3 mm.) " " " with correction collar. Best Series. 269 $\frac{1}{8}$ inch (2 mm.) 1.25 N. A. Oil Immersion objective. Best Series. Beck's achromatic condenser. Dust-tight triple nose piece. Polarizing apparatus. Eye piece and stage micrometers. Beck's vertical Camera Lucida. Magnifying power from 16 to 1650.....	401 65

**\*7044/4—Microscope. The Star Microscopes. (One Illustr. p. 312.)**

<b>*No. 100.</b>	"The Star" Microscope, with sliding coarse adjustment, and fine ditto by screw, 1 eye piece, 1 inch objective-glass, double mirror and diaphragm, in wooden case (Illustr. p. 312).....	\$33 30
<b>No. 104.</b>	"The Star" Microscope— Stand same as No. 100, with 1 eye piece, 2 object-glasses, 1 inch and $\frac{1}{4}$ inch, giving powers from 60 to 300 diameters, double mirror and diaphragm, in wooden case.....	45 80
<b>No. 106.</b>	"The Star" Microscope— Stand same as No. 100, with 1 eye piece, 2 object-glasses, $\frac{3}{8}$ inch and $\frac{1}{8}$ inch, giving powers from 70 to 450 diameters, double mirror and diaphragm, in wooden case.....	58 30
<b>*No. 110.</b>	"The Star" Microscope, with rack and pinion coarse ad- justment, fine ditto by screw, 2 eye pieces, 1 inch object-glass, double mirror and diaphragm, in wooden case.....	45 80
<b>No. 112.</b>	"The Star" Microscope—Stand same as No. 110, with 2 eye pieces, 2 object-glasses, 1 inch and $\frac{1}{4}$ inch, giving powers from 60 to 570 diameters, double mirror and diaphragm, in wooden case.....	58 30
<b>No. 114.</b>	"The Star" Microscope—Stand same as No. 110, with 2 eye pieces, 2 object-glasses, $\frac{3}{8}$ inch and $\frac{1}{8}$ inch, giving powers from 70 to 840 diameters, compound substage condenser No. 384, double mirror and diaphragm, in wooden case.....	70 80



7044/4 No. 110

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*7044/5—Microscope. New Medical Microscopes.**

No. 151. The New Medical Microscope, with diagonal rack and pinion coarse adjustment, very delicate fine adjustment, nickel-plated draw-tube, circular stage. Mirror on movable arm arranged so that it can be thrown above the stage for the illumination of opaque objects. Substage Iris diaphragm, divisible objective of superior quality, giving powers of  $\frac{3}{4}$  inch and  $\frac{1}{2}$  inch and magnification of from 50 to 400 diameters, and one eye piece, in polished hardwood case

\$ 45 80

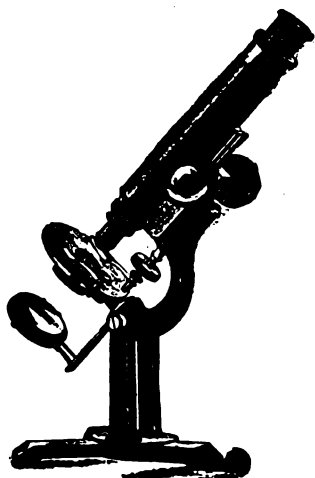
No. 151A. Same as No. 151, with Abbe condenser and Iris diaphragm on swinging arm, No. 393

70 80

No. 151B. Same as No. 151A, with addition of  $\frac{1}{2}$  inch Oil Immersion objective

127 50

NOTE.—If desired, any of the Picroptic objectives No. 7077/3 can be used on this microscope in tead of the Divisible objective supplied herewith. Additional eye pieces, \$5 00 each.



7044/5



7061/1

**\*7061/1—Microscope, Physiological.** The stand has a japanned iron base, double pillars and arm. The balance is made of brass, handsomely finished and lacquered. The draw-tube is nickel-plated and can be used at either the long or short standard. The coarse adjustment is by rack and pinion of the diagonal pattern preventing looseness, and provision is made to compensate for wear. This movement can be operated from either side of the stand by a milled head. The fine adjustment is by micrometer screw. This works in a slide. The movement is perpendicular to the plane of the stage and there is absolutely no lateral or lost motion. The circular stage of ample size is fitted with removable spring clips and rotating diaphragm with five apertures on the under side. A concave mirror is provided which swings to any obliquity below or above the stage. **Magnifying power from 154 to 649 diameters.**

A—Stand with 1 inch Huyghenian eye piece, and  $\frac{1}{4}$  inch and  $\frac{3}{4}$  inch divisible objective, including polished hardwood case

35 00

AA—Stand with 1 inch Huyghenian eye piece and  $\frac{1}{4}$  inch and  $\frac{3}{4}$  inch separate objectives, and double nose-piece, including polished hardwood case

50 00

3/A—Stand with 1 inch Huyghenian eye piece and  $\frac{1}{4}$  inch and  $\frac{3}{4}$  inch divisible objectives, and double nose-piece, including polished hardwood case

41 75

**\*7063—Microscope, Child's,** with 3 lenses, with which a power of 33 diameters can be obtained, which is quite sufficient to show many of the larger animalculæ in pond or ditch water, the scales from a butterfly's wing, etc., etc. It is much more readily managed by a novice than a compound microscope. It is furnished with the following accessories: Animalculæ cage or live-box for confining insects, etc., pair of brass forceps, watch-glass and 2 plain glass slips. One prepared object. In polished case. (Illustr. p. 315.)

5 75

REMEMBER OUR DISCOUNT.

\*7064—**Microscope, Excelsior.** The neat walnut case serves also as a stand when in use. It contains an adjustable mirror for illumination of transparent objects. There are 3 lenses, which may be used separately from the stand and carried in the pocket when desired. It may be used for the examination of objects in water, or reversed and used with the flat side up if preferred. The power ranges from 5 to 20 diameters, which is sufficient to show the separate corpuscles of frog's blood and a very great variety of interesting objects. With 2 needles in handles for dissecting.....

\$ 3 00

\*7065—**Microscope, School,** magnifying power from 5 to 40 diameters, with condensing lens for opaque objects, brass forceps and an aquatic box for the examination of objects in water. The stem screws firmly into the lid of the box, wherein the instrument is packed, when not in use.....

9 50



7064



7063



Dissecting Microscope No. 181. B.

7066/1

\*7066/1—**Microscope, Dissecting No. 181.**

**No. 181—Dissecting Microscope**, with large Stage, 10x12.5 cm., double Mirror, sliding focusing adjustment, two Objectives; in polished wooden case.....

11 65

**No. 181 A.**—Same as No. 181, but with handsomely finished iron base and only one Objective.....

10 00

**No. 181 B.**—Dissecting Microscope, same as above but with rack and pinion focusing adjustment and jointed arm; in polished wooden case.....

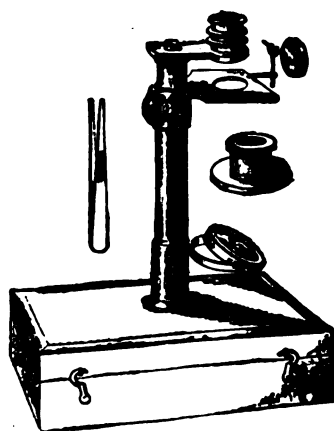
16 65

**Objectives** for above, 1 inch and  $\frac{1}{4}$  inch focus. Each.....

83

**Very powerful aplanatic Objectives**, 10 diameters, giving perfectly flat and very brilliant field.....

1 65



7065

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

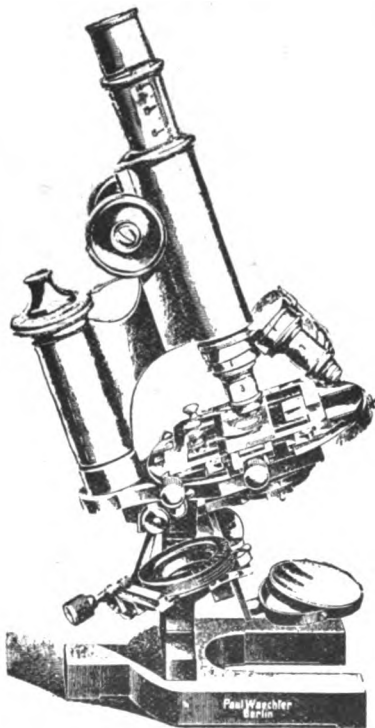
## MICROSCOPES,

MANUFACTURED BY PAUL WAECHTER, FRIEDENAU.

Paul Waechter's Microscopes, Objectives, Stands and Accessories having a world-wide reputation for excellency unsurpassed by any other make, we take pleasure in recommending them to our patrons and friends.

Our customers can select any other Waechter's Objectives No. 7077/2 and Eye-pieces No. 7077/62 for the various Stands, besides the combinations enumerated herein, and the price of a complete microscope, selected in this way, can be ascertained by adding the prices of the Objectives and Eye-pieces to the price of the Stand selected.

REMEMBER OUR DISCOUNT.



7076/1 No- 21

\*1 7076/1—Microscope, Paul Waechter's No. 1A.

\*No. 21.—Most complete stand with all accessory apparatus, suitable for all requirements. The body of stand is inclinable, a lever at joint fixing the body at any desired angle. Coarse adjustment by rack and pinion, fine adjustment by means of a most perfectly working micrometer screw with divided head (each division—.01 mm. elevation or depression in the direction of the optical axis). Draw-tube provided with a mm. scale. Large Abbe Condenser, so arranged that the condenser system may be swung out to the side thereby permitting in place of the Condenser the use of the Cylinder Iris Diaphragm; the latter may be opened or closed by means of a small projecting button. Below the condenser is the Iris Diaphragm fitted with rack and pinion movement to throw it out of the center at an angle to the optical axis and which can then be rotated about that axis or entirely swung out. The whole apparatus can be raised or lowered by means of rack and pinion.

The circular Object Stage, which may be rotated and centered with respect to the optical axis, has a diameter of 120 mm. and is provided with a vulcanite plate, removable and readily interchangeable with Waechter's New Mechanical Stage No 91. This Stage admits of two movements at right angles to each other in the plane of the object and the extent of these movements may readily be ascertained by referring to the scales. The mechanism is of such nature that nothing about it interferes with its usefulness in practical work. The Mechanical Stage, also, may be rotated and centered. Nose-piece for three Objectives, Drawing Apparatus according to Abbe No. 94, Large Polarization Apparatus No. 87, Eye-piece Micrometer No. 101, Objective Micrometer No. 100, Cover Glass Gauge No. 99, Slides and Cover Glasses, Oil of Cedar in vial with case, Achromatic Objectives No. 1, 2, 3, 4, 5, 6, 7, 8, 9, Homogeneous Immersion Objectives  $\frac{1}{10}$ ,  $\frac{1}{8}$ ,  $\frac{1}{6}$ , Eye-pieces No. 1, 2, 3, 4, 5. Magnifying Power 21 to 1687 diameters.....

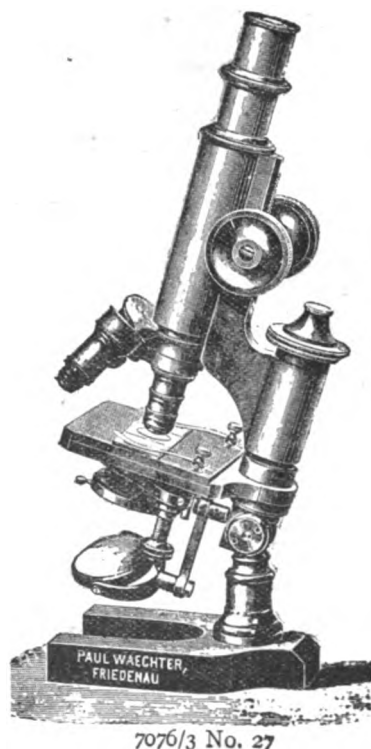
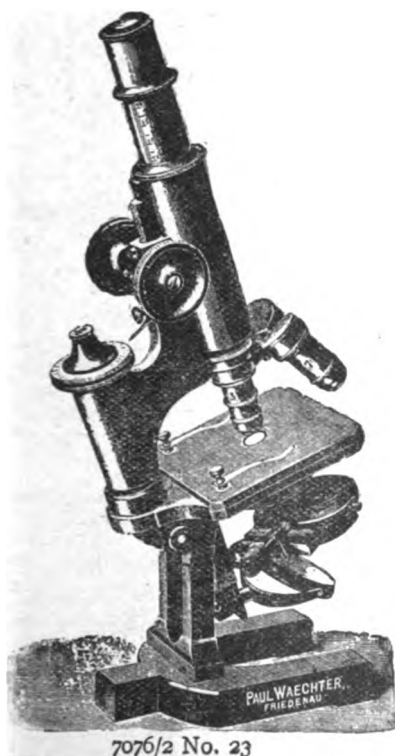
\$ 800 00

No. 22.—Stand with Abbe Condenser and Cylinder Iris Diaphragm, movable Object Stage and round Vulcanite Stage, Nose-piece for three Objectives.....

262 50

## \*I 7076/2—Microscope, Paul Waechter's, No. 1.

- \*No. 23.—Large Microscope, for bacteriological work,** suitable for almost all requirements, with joint for inclination, coarse adjustment by rack and pinion, fine adjustment by means of a most perfectly working micrometer screw with divided head, Draw-tube with mm. scale. Abbe Condenser with Iris Diaphragm, rack and pinion for raising and lowering the entire apparatus; the condenser system can easily be taken out and the Cylinder Diaphragm can be used in its place. Nose-piece for three Objectives. Eye-piece Micrometer, length of scale 5 mm.=50 divisions. Objectives No. 3 and 7, Homogeneous Immersion  $\frac{1}{4}$  and  $\frac{1}{8}$ . Eye-pieces No. 1, 2, and 4 (or No. 2, 3 and 5, as desired). Magnifying Power, 49 to 1687 diameters..... \$ 381 00
- No. 24.—**Same as No. 23. Objectives No. 3 and 7, Homogeneous Immersion  $\frac{1}{4}$ , Eye-pieces No. 1, 2 and 4 (or No. 2, 3 and 5, as desired). Magnifying Power 49 to 1270 diameters..... 268 50
- No. 25.—**Same as No. 23. Objectives No. 3 and 7, Homogeneous Immersion  $\frac{1}{4}$ , Eye-pieces No. 1 and 3 (or No. 2 and 4, as desired). Magnifying Power 49 to 955 diameters..... 247 50
- No. 26.—Stand.** Draw-tube with mm. scale, without Objectives and Eye-pieces, without Abbe Condenser and without Nose-piece.. 86 25



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm. · 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

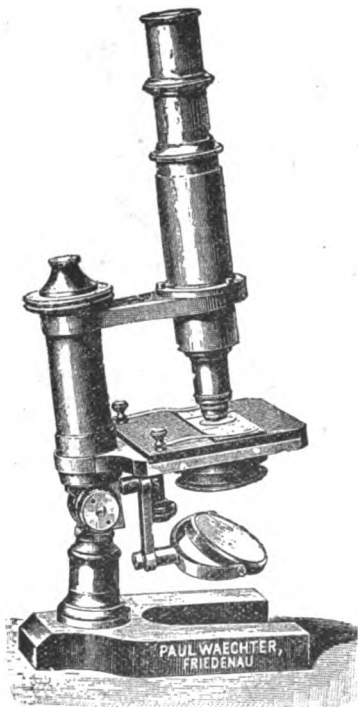
## \*I 7076/3—Microscope, Paul Waechter's, No. II.

- \*No. 27.—Large Microscope,** for the same purposes as No. 7076/2, with joint for inclination, coarse adjustment by rack and pinion, fine adjustment by means of a most perfectly working micrometer screw, Medium Abbe Condenser No. 82 with Iris Diaphragm, threaded screw for raising and lowering the entire apparatus. The condenser system can easily be taken out and the Cylinder Diaphragm can be used in its place. Nose-piece for three Objectives. Objectives No. 3, 5, 7,  $\frac{1}{4}$ ,  $\frac{1}{8}$  Homogeneous Immersion. Eye-pieces No 2, 3 and 4. Magnifying Power 49 to 1226 diameters.....

356 00

\*I 7076/3—**Microscope, Paul Waechter's, No. II.** (Continued.)

<b>No. 28.</b> —Same as No. 27. Objectives No. 3, 7, $\frac{1}{8}$ , $\frac{1}{4}$ Homogeneous Immersion, Eye-pieces No. 2, 3 and 4. Magnifying Power 49 to 955 diameters.....	\$ 281 00
<b>No. 29.</b> —Same as No. 27. Without Nose-piece, with Abbe Condenser and Iris Diaphragm, Objectives No. 3, 7, $\frac{1}{8}$ , $\frac{1}{4}$ Homogeneous Immersion, Eye-pieces No. 2, 3 and 4. Magnifying Power 49 to 955 diameters.....	210 00
<b>No. 30.</b> —Same as No. 29. Objectives No. 3, 7, $\frac{1}{8}$ , $\frac{1}{4}$ Homogeneous Immersion, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 750 diameters.....	187 50
<b>No. 31.</b> —Same as No. 29. Without Abbe Condenser, provided with ordinary plane and concave Mirrors, which have lateral and vertical motion, Objectives No. 3, 5 and 7, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 615 diameters.....	127 50
<b>No. 32.</b> —Stand without Objectives and without Eye-pieces, but with Abbe Condenser and Iris Diaphragm.....	60 00
<b>No. 33.</b> —Stand without Objectives and without Eye-pieces, but with Iris Diaphragm. Provided with ordinary plane and concave Mirrors, which have lateral and vertical motion.....	67 50

\*I 7076/4—**Microscope, Paul Waechter's, No. IIIa.****\*No. 34.—Medium Microscope,**

with joint for inclination, provided with a sliding tube for coarse adjustment, fine adjustment by means of a most perfectly working micrometer screw, Condenser No. 83 with Iris Diaphragm, threaded screw for raising and lowering. The Cylinder Diaphragm is interchangeable with the Condenser. Large plane and concave Mirror with universal motion. When using a revolving nose-piece with this stand a clamping ring is required to prevent rotating of the tube in its sleeve. No charge made for the clamping ring, if a complete microscope is ordered. Objectives: No. 3, 7,  $\frac{1}{8}$ ,  $\frac{1}{4}$  Homogeneous Immersion, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 955 diameters.....

7076/4 No. 34

187 50

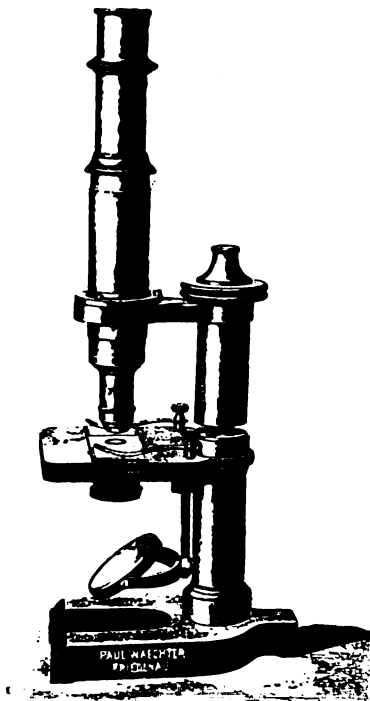
<b>No. 35.</b> —Same as No. 34. Objectives No. 3, 7, $\frac{1}{8}$ , $\frac{1}{4}$ Homogeneous Immersion, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 750 diameters.....	168 75
<b>No. 36.</b> —Same as No. 34 without Condenser and without Iris Diaphragm. Objectives No. 3, 5 and 8, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 750 diameters.....	116 25
<b>No. 37.</b> —Same as No. 34 without Condenser and without Iris Diaphragm. Objectives No. 3 and 7, Eye-pieces No. 2 and 4. Magnifying Power 49 to 615 diameters.....	90 00
<b>No. 38.</b> —Stand with Condenser and Iris Diaphragm, but without Objectives and without Eye-pieces.....	71 25
<b>No. 39.</b> —Stand without Condenser and Iris Diaphragm, and without Objectives and Eye-pieces.....	48 75

REMEMBER OUR DISCOUNT.

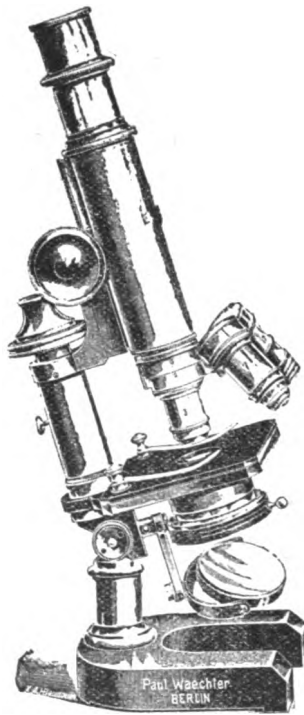


## \*I 7076/5—Microscope, Paul Waechter's No. III.

- \*No. 40.—Medium Microscope**, without Condenser; adjustment by sliding tube and micrometer screw. This stand is the same as No. 7076/4, but without joint for inclination. Objectives No. 3, 5 and 7, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 615 diameters ..... \$ 101 25
- No. 41.—Same as No. 40.** Objectives No. 3 and 7, Eye-pieces No. 2 and 4 (or No. 2 and 3). Magnifying Power 49 to 615 diameters.. 82 50
- No. 42.—Stand without Objectives and Eye-pieces**..... 41 25



7076/5 No. 40



7076/6 No. 43

## \*I 7076/6—Microscope, Paul Waechter's, No. IVa.

**Laboratory Microscope for Chemists, Druggists, Brewers, etc.**

- \*No. 43.—Microscope on strong stand**, provided with a sliding tube for coarse adjustment; fine adjustment by means of a most perfectly working micrometer screw, Cylinder diaphragm interchangeable with the Condenser, large plane and concave Mirror with universal motion, Abbe Condenser with Iris Diaphragm. **This microscope is only furnished in the following combinations:** Objectives No. 3, 7 and  $\frac{1}{4}$ , Homogeneous Immersion, Eye-pieces No. 2 and 4 (or No. 3 and 4). Magnifying Power 49 to 955 diameters (without nose-piece), without joint for inclination..... 150 00
- Without joint for inclination; coarse adjustment by rack and pinion..... 157 50
- With joint for inclination..... 153 75
- With joint for inclination, coarse adjustment by rack and pinion.... 161 25
- No. 44.—Same as No. 43**, without Abbe Condenser and Iris Diaphragm. Objectives No. 3, 7 and 8, Eye-pieces No. 2 and 4 (or No. 3 and 4). Magnifying Power 49 to 750 diameters.
- Without joint for inclination..... 101 25
- Without joint for inclination; coarse adjustment by rack and pinion..... 108 75
- With joint for inclination..... 105 00
- With joint for inclination; coarse adjustment by rack and pinion.... 112 50

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

\*I 7076/6—**Microscope, Paul Waechter's, No. IVa.** (Continued.)

<b>No. 45.</b> —Same as No. 43, without Abbe Condenser and Iris Diaphragm. Objectives No. 3, 5 and 7, Eye-pieces No. 2 and 4 (or No. 3 and 4). Magnifying Power 49 to 615 diameters.	
Without joint for inclination.....	\$ 90 00
Without joint for inclination; coarse adjustment by rack and pinion.....	97 50
With joint for inclination.....	93 75
With joint for inclination; coarse adjustment by rack and pinion....	101 25
<b>No. 46.</b> —Same as No. 43, without Abbe Condenser and Iris Diaphragm. Objectives No. 3 and 7, Eye-pieces No. 2 and 4 (or No. 3 and 4). Magnifying Power 49 to 615 diameters.	
Without joint for inclination.....	71 25
Without joint for inclination; coarse adjustment by rack and pinion.....	78 75
With joint for inclination.....	75 00
With joint for inclination; coarse adjustment by rack and pinion..	82 50

I 7076/7—**Microscope, Paul Waechter's, for Mineralogy.**

**No. 47.**—**Large Microscope.** Stand like No. 7076/1—No. Ia. Coarse and fine adjustment, Abbe Condenser No. 81. Circular Object Stage, which may be rotated about and centered, with graduated circumference. Polariser-Nicol in the Diaphragm Carrier. The Condenser can easily be replaced by a simple Diaphragm Carrier. Draw-tube with scale movable by rack and pinion. Analyser in metal sleeve fitting over the Eye-piece with circle graduated in 360°. Bertrand Lens inserted through an opening in the tube. The Analyser has a slit for the insertion of Selenite and Mica Plates.

The following accessories belong to the Stand: Nose-piece for three Objectives, Eye-piece No. 2 with cross hairs, Selenite Plate, red of the first order, Quartz Plate according to Klein.

Calc-spar Plate according to Brezina, to be used with Eye-piece No. 2.....

With new Mechanical Stage No. 91..... 225 00

**No. 48**—Same as No. 47, but with Eye-piece No. 3 and Objectives No. 3 and 7.

Magnifying Power 49 to 615 diameters..... 262 50

With new Mechanical Stage No. 91..... 315 00

**No. 49.**—Same as No. 47, but with Eye-piece No. 3 and Objectives

No. 1, 3, 5, 7 and  $\frac{1}{2}$  Homogeneous Immersion..... 367 50

With new Mechanical Stage No. 91..... 420 00

I 7076/8—**Microscope, Paul Waechter's, for Mineralogy.**

**No. 50.**—**Small Stand.** Size and form of No. 7076/16—No. Va. Adjustment by rack and pinion most carefully made and adjusted, so that a micrometer screw is not needed, since adjustments up to 500 diameters can easily be made. The stage, which may be rotated and centered, with circumference graduated in 360°; its rotation may be read off by means of an index.

The Polarizer takes the place of a Diaphragm Carrier and may be taken out, so that it can easily be exchanged for an ordinary Diaphragm Carrier or a Cylinder Iris Diaphragm. Analyser same as in No. 7076/7. The Objective has a slit for Quartz Plates, etc.

Price, with eye-piece No. 2 with cross hairs, Quartz Plate according to Klein and Selenite Plate, red of first order..... 75 00

**No. 51.**—Same, with Eye-piece No. 3 and Objectives No. 3 and 5..... 108 75

**No. 52.**—Same, with Eye-piece No. 3 and Objectives No. 3, 5 and 7.. 131 25

\*I 7076/9—**Microscope, Paul Waechter's, for School Use, No. IV.**

**No. 53.** **Small Microscope,** in fine mahogany case with lock and key. Adjustment by sliding tube in sleeve. Micrometer Screw. Simple Diaphragm. Plane and concave Mirror. Objectives No. 3 and 7. Eye-pieces No. 3 and 4. Magnifying Power 67 to 615 diameters,..... 60 00

**No. 54.**—Same, with Objective No. 4 (1+2) small aperture with two separable lens s and Objective No. 7. Eye-pieces No. 3 and 4. Magnifying Power 30 to 615 diameters..... 54 00

**\*No. 55.**—Stand without Objectives and Eye-pieces (Illustr. p. 321) 18 75

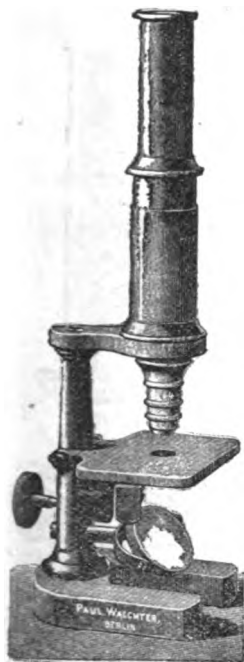
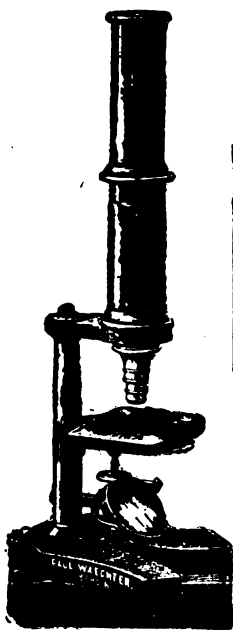
REMEMBER OUR DISCOUNT.

\*I 7076/10—**Microscope, Paul Waechter's, for School Use, No. V.**

*No. 56. Same Stand as No. 55, without Objectives and Eye-pieces.....	\$ 18 75
Objective No. 5 (1+2+3) small aperture with three separable lenses.....	7 50
Eye-pieces No. 3 and 4 .....	7 50
Magnifying Power 30, 50, 100, 150, 200 and 250 diameters. Price.....	33 75

\*I 7076/11—**Microscope, Paul Waechter's, No. VI.**

*No. 57.— <b>Small Microscope.</b> Adjustment by sliding tube and Micrometer Screw. Diaphragm. Plane and Concave Mirror. Objective No. 5 (1+2+3) small aperture. Eye-piece No. 3. Magnifying Power 30 to 200 diameters.....	22 50
No. 57½.—Same as No. 57, with rack and pinion.....	26 25
No. 58.—Same Stand as No. 57, but only with plane Mirror. Objective No. 4 (1+2) small aperture with 2 separable achromatic lenses. Eye-piece No. 3. Magnifying Power 30 to 100 diameters..	18 75
No. 58½.—Same as No. 58, with rack and pinion.....	22 50

7076/9 No. 55  
7076/10 No. 56

7076/11 No. 57



7076/12

\*I 7076/12—**Microscope, Paul Waechter's Demonstration Microscope No. VIII, for Universities, High Schools and Home Use.** The microscope is intended for the demonstration of microscopic objects and can be passed from hand to hand. In wooden box.

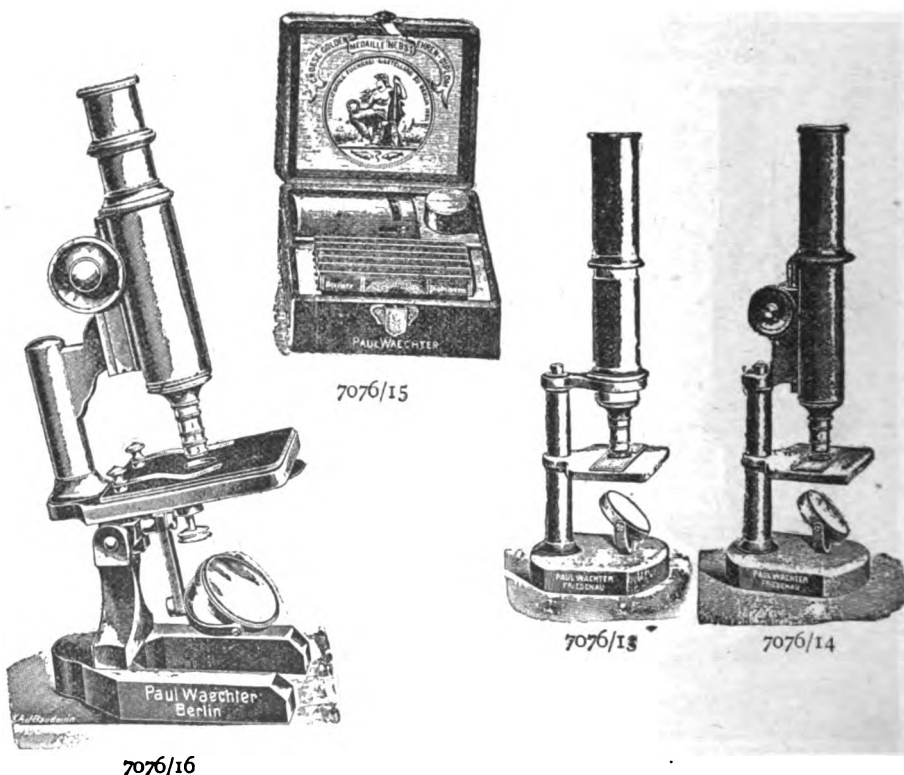
No. 59A.—With Objective No. 5 (1+2+3) small aperture and Eye-piece No. 3. For preparations 76x26 mm. Magnifying Power 30, 100 and 150 diameters.....	22 50
No. 59B.—With Objective No. 4 (1+2) small aperture and Eye-piece No. 3. For preparations 76x26 mm. Magnifying Power 30 and 100 diameters.....	20 25
No. 59C.—With Objective No. 4 (1+2) small aperture and Eye-piece No. 3. For preparations 58x17 mm. Magnifying Power 30 and 100 diameters .....	15 75
If desired No. 59A and B can be furnished with a small frame for using also preparations 58x17 mm. at an additional cost of .....	1 90

\*I 7076/13—**Microscope, Paul Waechter's, No. IX, of moderate magnifying power. In wooden case.**

No. 60.— <b>Small Microscope.</b> Iron support with adjustment by sliding tube. Plane Mirror. Eye-piece No. 3. Objective No. 4 (1+2) small aperture. Magnifying Power 30 to 100 diameters (Illustr p. 322)	15 75
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- \*I 7076/14—**Microscope, Paul Waechter's, No. X**, of moderate magnifying power. In wooden case.  
**No. 61.**—Same as No. 7076/13, but with rack and pinion. **A favorite microscope.**  
 Eye-piece No. 3. Objective No. 4 (1+2) small aperture. Magnifying power 30 to 100 diameters ..... \$ 18 00
- \*I 7076/15—**Microscope, Paul Waechter's Universal Pocket Microscope with Loupe, No. XIV.**  
**No. 62.**—Magnifying Power 50 diameters ..... 4 50  
**No. 63.**—Fifty beautiful mounted objects for microscope No. 62, 12 plain slides and 2 slides with concave centers in carton..... 9 00  
**No. 64.**—Ten mounted Objects without carton..... 1 90

**REMEMBER OUR DISCOUNT.**

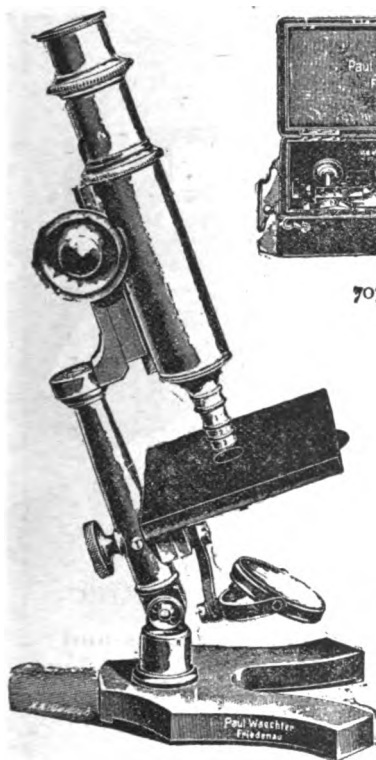


- \*I 7076/16—**Microscope, Paul Waechter's, No. Va, for Examination of Trichinae**, recommended by Prof. Dr. Johne. In mahogany case with lock and key. **Over 20,000 of these microscopes are in use.**  
**No. 66.**—Large Microscope, coarse adjustment by means of rack and pinion, fine adjustment by Micrometer Screw, Diaphragm, large plane and concave Mirror with universal motion. On account of the large Object Stage (90x86 mm.) very large and wide slides can be used.  
 Objective No. 5 (1+2+3) small aperture. Eye-pieces No. 3 and 4. Magnifying Power 30, 50, 100, 150 and 250 diameters..... 37 50  
**\*No. 66½.**—With joint for inclination, otherwise like No. 66..... 42 00  
**No. 67.**—Same as No. 66.  
 Objective No. 4 (1+2) small aperture. Eye-piece No. 3. Magnifying Power 30 and 100 diameters..... 31 50  
**No. 67½.**—With joint for inclination, otherwise like No. 67..... 36 00  
**No. 68.**—Stand without Objective and Eye-pieces..... 22 50  
**No. 68½.**—With joint for inclination, otherwise like No. 68..... 27 00  
**Any Microscope No. 7076/16 with extra large Object Stage 9x12 cm. will be furnished, if desired, at an extra cost of** ..... 2 25

I 7076/17—**Microscope, Paul Waechter's, No. Va (new model), for examination of Trichinae, No. 69**..... \$ 45 00

\*I 7076/18—**Microscope, Paul Waechter's, No. Vb, for the examination of Trichinae; portable for traveling.** Weight, including case 2 kilos. Leather covered case (24x11x7 cm.) with nickel-plated handle.

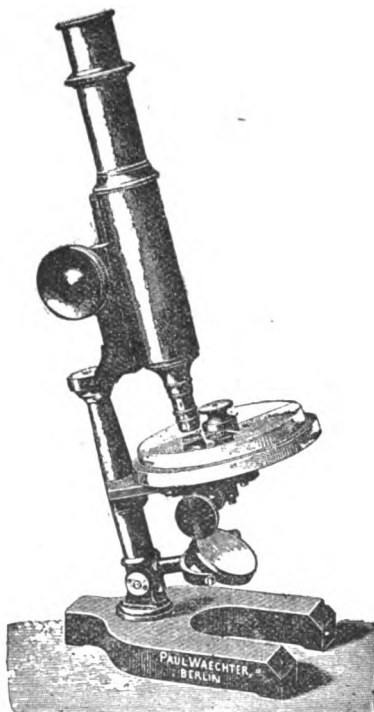
**No. 70. Large Microscope;** strong brass Stand, adjustment by means of a most perfect rack and pinion movement, large Object Stage (80x100 mm.) with Vulcanite Plate, large plane and concave Mirror with universal motion. Objective No. 5 (1+2+3) small aperture. Eye-pieces No. 3 and 4 ..... 45 00



7076/18



7076/18



7076/19

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 lb. av. oz.=28 grm.; 1 pound=450 grm.

\*I 7076/19—**Microscope, Paul Waechter's, No. XIII, patented in Germany No. 11727, for the examination of Trichinae.** Thousands of these microscopes are in use. It is acknowledged the best microscope for the examination of Trichinae. It permits extraordinarily quick and accurate work. Description and directions furnished on application. In mahogany case with lock and key.

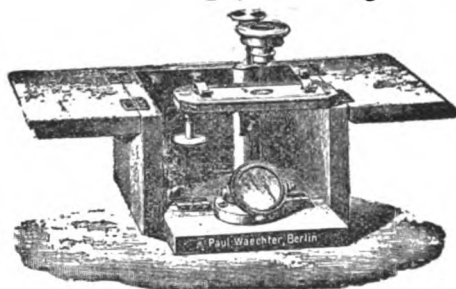
**No. 71.—Objective No. 5 (1+2x3) small aperture. Eye-piece No. 3. Magnifying Power 30, 100, 150, 50, 100 and 200 diameters.**..... 45 00

I 7076/20—**Microscope, Paul Waechter's Dissecting Microscope.**

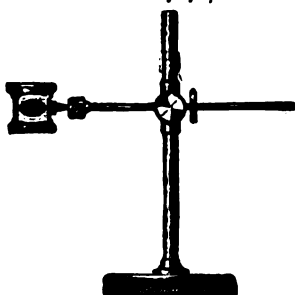
**No. 72.—Large Dissecting Microscope** (for anatomical purposes), with heavy iron horse shoe base, very large table, to which hand-rests can easily be attached. Adjustment by means of rack and pinion; plane and concave mirror with universal motion. The lens-carrier can be moved to the side and can be elongated. Two achromatic Lenses according to Steinheil, of a magnifying power of 9 and 14 diameters. Drawing apparatus according to Abbe, detachable.....

75 00

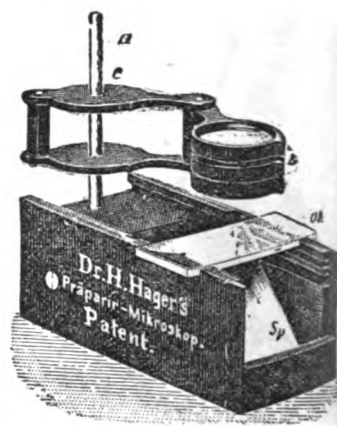
- \*I 7076/21—Microscope; Paul Waechter's Dissecting Microscope. No. 73.—Small Dissecting Microscope. Folding case for traveling, very compact. The lenses are perfectly achromatic. Magnifying Power 15, 25 and 40 diameters..... \$ 27 00
- \*I 7076/22—Microscope, Paul Waechter's Lens Holder, No. 74, with arm and ball joint ..... 9 00
- \*I 7076/23—Microscope; Paul Waechter's Simple Dissecting Microscope, according to Dr. H. Hager, No. 80 ..... 4 50



7076/21



7076/22



7076/23

REMEMBER OUR DISCOUNT.

### MICROSCOPE ACCESSORIES.

**Balsam Bottles.** See No. 3220 and No. 3316.

**Cover Glass.** See No. 4480, etc.

**Glass Slips or Slides.** See No. 8420, etc.

I 7077/2—Microscope Accessories. **ACHROMATIC OBJECTIVES**, Paul Waechter's.

**Linear Magnifying Power of Waechter's Objectives and Eye-pieces.**

**Image Distance 250 mm. Tube Length 160 mm.**

	Objectives.	Equivalent Focus, mm.	Numerical Aperture.	Magnifying Power with Eye-Pieces.					PRICE.
				No. 1	2	3	4	5	
Dry.	1	40	0.17	21	28	38	.....	.....	\$ 11 25
	2	25	0.17	27	35	48	.....	.....	11 25
	3	17	0.26	36	49	67	90	120	11 25
	4	13	0.36	66	87	120	165	218	18 75
	5	8	0.42	108	145	200	270	360	18 75
	6	5.1	0.77	147	190	270	368	410	22 50
	7	3	0.86	246	328	450	615	820	22 50
	8	2.5	0.88	300	400	550	700	1000	30 00
	9	1.8	0.90	382	510	790	955	1270	43 50
Homogeneous Immersion.	1/10	2.8	1.25	354	460	535	750	1050	56 25
	1/12	2.3	125-130	382	510	700	955	1270	75 00
	1/16	1.8	125-130	653	788	967	1226	1687	112 50

**\*7077/3—Microscope Accessories. R. & J. Beck's New Pecroptic Series of Achromatic Objectives.**

This new series of microscopic objectives combine in their construction the results of experience gained during a period extending over fifty years.

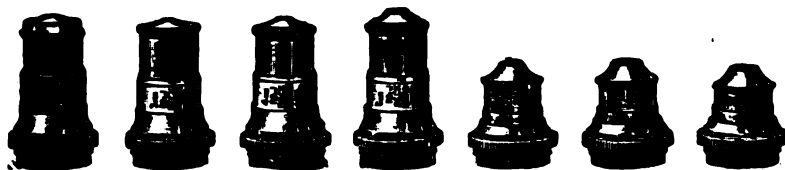
The formulæ of the Beck microscope objectives have been undergoing constant improvements and the introduction of

**THE NEW JENA OPTICAL GLASS**

has greatly extended the scope for original combination.

The testing of the lenses and the final adjustments and corrections upon which the quality so largely depends, have been placed upon such an organized basis by the Messrs. Beck that it is practically impossible for a lens to leave their works in anything but a perfect condition.

The New Pecroptic Lenses are characterized by their brilliant definition together with the careful correction of their oblique pencils. The high powers of the first Series (A), are adjusted for a cover glass of the thickness of .006 inch with a Short or Continental tube length. The more expensive Second Series are, in the higher powers, provided with an adjustment collar. All Pecroptic objectives are supplied in brass boxes.



7077/3 Series A



7077/3 Series B

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 gram.

**Prices of Beck's New Pecroptic Achromatic Objectives.**

**Series A.**

No.	Focal length in millimeters.	Corresponding approximate designation. English system.	Angular Aperture.	Price.
250	40 mm.	2 inch	7°	\$10 80
251	22 mm.	1 inch	15°	10 00
252	14 mm.	$\frac{3}{4}$ inch	17°	10 00
252A	12 mm.	$\frac{1}{2}$ inch	35°	17 50
253	6 mm.	$\frac{1}{4}$ inch	90°	18 30
254	4 mm.	$\frac{1}{8}$ inch	90°	21 65
255	3 mm.	$\frac{1}{8}$ inch	90°	21 65
256	3 mm.	$\frac{1}{8}$ inch	110°	26 65

**Homogeneous Immersion.**

**No. 258 2 mm. 1/12 inch N. A. 1.10 \$56 65**

**NOTE:**—Beck's New 1/12 Oil Immersion Pecroptic Objective No. 258 is especially designed for bacteriological work. After most careful tests, it has been found that the aperture of this lens is the one best adapted to this class of work, giving as it does much more perfect definition than the higher apertures. Although the price is exceedingly low we recommend this lens as the best instrument on the market for bacteriological work.

**\*7077/3—Microscope Accessories. R. & J. Beck's New Picroptic Series of Achromatic Objectives. (Continued.)**

(Illustr. p. 325.)

**Series B.**

No.	Focal length in millimeters.	Corresponding approximate designation, English system.	Angular Aperture.	Price.
260	40 mm.	2 inch	8°	\$18 30
261	30 mm.	1½ inch	15°	21 65
262	22 mm.	1 inch	18°	21 65
263	16 mm.	¾ inch	20°	22 50
264	12 mm.	½ inch	38°	25 00
265	6 mm.	¼ inch adjustable	90°	33 30
266	4 mm.	¼ inch adjustable	110°	41 65
267	3 mm.	¼ inch adjustable	110°	50 00

**Homogeneous Immersion.**

268	2 mm.	⅜ inch	N. A. 1.25	\$ 73 30
269	1.5 mm.	⅜ inch	N. A. 1.25	133 30

The Series B Picroptic Objectives have a greater angular aperture than the Series A; and Nos. 265, 266 and 267 have adjustment collars. These lenses in optical perfection and finish are the equal of the most expensive lenses in the market.

Those who purchase a Beck Picroptic objective may feel confident that one is as good as another and that each individual lens is up to the standard first quality, without which qualification no lens can pass the scrutiny of their able testing staff.

It would be possible to place on the market a lens at a much lower figure were it not that rather than allow any objective to leave the factory which does not reach the required standard many are discarded.

**7077/4—Microscope Accessories. Planachromatic Objectives.**

¼ inch, 0.35 N. A.	\$ 13 30
¼ inch, 0.87 N. A.	25 00
⅜ inch, Homogeneous Immersion, 1.35 N. A.	50 00

**7077/22—Microscope Accessories. Spencer Lens Co.'s Bacteriological Series Objectives, Oil Immersion, non-adjusting.** Corrected for 160 mm. tube length unless otherwise ordered. These Objectives fill, in a high degree, the requirements of workers in bacteriology, physiological botany, and general histology, possessing with brilliant definition the highest resolving power belonging to their aperture in each case, with flatness of field and long working distance.

Equivalent Focus.		Numerical Aperture.	Balsam Angle.	Price.
Inches.	Millimeters.			
⅛	3.2	1.22	106°	\$ 72 92
⅜	2.1	1.30	117°	58 15
⅝	1.25	1.22	106°	156 25
⅞	.83	1.22	106°	229 15
1	.71	1.30	117°	270 85

**I 7077/23—Microscope Accessories. OBJECTIVES FOR PROJECTION AND MICRO-PHOTOGRAPHY, PAUL WAECHTER'S.**

The Objectives furnish a large, clear and flat field, are free from focus errors and are used without eye-pieces.

No. 13—Equivalent Focus 60 mm.	Each	26 25
No. 14—Equivalent Focus 40 mm.	Each	26 25
No. 15—Equivalent Focus 25 mm.	Each	26 25

**7077/32—Microscope Accessories. Spencer Lens Co.'s Student Series Objectives, Dry, non-adjusting, corrected for 160 mm. tube length, unless otherwise ordered.**

This is a thoroughly well corrected series of Objectives of very moderate price. Their long working focus, flatness of field and excellence of definition render them thoroughly efficient for the every day work of the physician and student. Of the lower powers we call particular attention to the 1 in. and ¾ in. of 30° as lenses equal to the very best made.

REMEMBER OUR DISCOUNT.



**7077/32—Microscope Accessories. Spencer Lens Co.'s Student Series Objectives, Dry, non-adjusting. (Continued.)**

Equivalent focus.		Numerical Aperture.	Air Angle.	Price.
Inches.	Millimeters.			
3	75	0.10	11°	\$10 00
2	50	0.12	13°	10 00
1	25	0.26	30°	25 00
1	16.6	0.26	30°	16 65
1	12.5	0.41	50°	29 15
1	6.3	0.77	100°	23 30
1	4.2	0.86	118°	23 30

**7077/33—Microscope Accessories. Spencer Lens Co.'s Educational Series Objectives, Dry, non-adjusting.**

All of the Objectives in this series are of good correction. The lower powers up to  $\frac{1}{2}$  inch are well suited to botanical work, the examination of foraminifera and other opaque objects, work requiring defining power not strictly confined to one place. All the higher powers are of great working focus. The  $\frac{1}{4}$  inch resolves *P. Angulatum* with mirror but slightly removed from central light.

Equivalent Focus.		Numerical Apertures.	Air Angle.	Price.
Inches.	Millimeters.			
3	75	0.07	8°	\$ 8 30
2	50	0.08	10°	8 30
1	25	0.12	13°	8 30
1	12.5	0.38	45°	16 65
1	6.3	0.61	75°	16 65
1	5	0.42	50°	20 80
1	3.2	0.68	85°	26 00

**7077/42—Microscope Accessories. Spencer Lens Co.'s Professional Series Objectives, Dry. Corrected to 160 mm. tube length, unless otherwise ordered.**

All the Objectives of this series are strictly first-class, and are in every way in proportion to their aperture, as effective as the higher series, and are possessed of considerably greater working focus.

Equivalent Focus.		Numerical Aperture.	Air Angle.		Price.
Inches.	Millimeters.				
2	50	0.14	16°	Non-Adjustable	\$31 25
1	16.6	0.31	36°	"	30 00
1	12.5	0.58	70°	"	41 65
1	6.3	0.85	116°	Adjustable	40 00
1	4.2	0.94	140°	"	83 30
1	3.2	0.97	151°	"	93 75

**7077/52—Microscope Accessories. Spencer Lens Co.'s First-Class Series Objectives, corrected for 160 mm. tube length unless otherwise ordered.**

**First-Class Oil Immersion Series**, specially intended for Photo-Micrography. For use with the yellow sensitive (orthochromatic) plates. Non-adjusting. For purely visual work, irrespective of their application to photography, these lenses will be found unequalled in resolving power combined with flatness of field and long working distance.

Equivalent Focus.		Numerical Aperture.	Balsam Angle.	Price.
Inches.	Millimeters.			
1	6.3	1.35	125°	\$145 85
1	4.2	1.35	125°	145 85
1	2.5	1.35	125°	156 25

**First-Class Dry Series.**

Equivalent Focus.		Numerical Aperture.	Air Angle.		Price.
Inches.	Millimeters.				
3	75	0.12	13°	Adjustable	\$ 33 30
2	50	0.18	20°	"	41 65
1	25	0.35	40°	Non-adjustable	58 30
1	5	0.35	163°	Adjustable	114 50

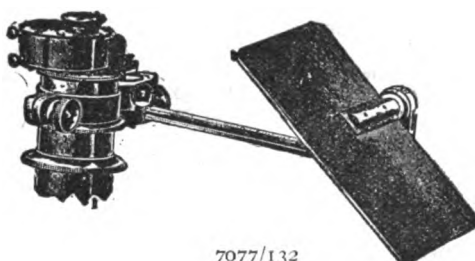
**I 7077/62—Microscope Accessories. HUYGHENIAN EYE-PIECES, Paul Waechter's.**

Eye-piece No.	1	2	3	4	5
Focus	48	40	30	22.5	17.5 mm.
Magnifying power	3	4	5.5	7.5	10
			Each.....		\$ 3 75

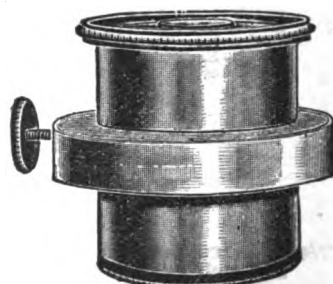
APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.;  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- 7077/67—**Microscope Accessories. BECK'S CONTINENTAL EYE-PIECES, No. 1, 2 and 3; each**..... \$ 3 75
- \*7077/72—**Microscope Accessories. Spencer Lens Co.'s Continental Eye-pieces, accurately centered and with exceptionally large field.**
- |                                       |      |
|---------------------------------------|------|
| 2 inch focal length (50 mm.).....     | 3 30 |
| 1½ inch focal length (37.5 mm.) ..... | 3 30 |
| 1¼ inch focal length (30 mm.) .....   | 3 30 |
| 1 inch focal length (25 mm.) .....    | 3 30 |
| ¾ inch focal length (19 mm.) .....    | 3 30 |
| ½ inch focal length (12.5 mm.) .....  | 3 30 |
- 7077/82—**Microscope Accessories. Spencer Lens Co.'s Micrometer Eye-piece (continental form), with fixed scale at diaphragm**..... 9 15
- \*7077/83—**Ditto. Micrometer Eye-piece with movable scale. The scale is divided in 1/10 mm. and movable by thumb-screw; each fifth and tenth line is longer than the others. The eye-lens is adjustable**..... 19 00

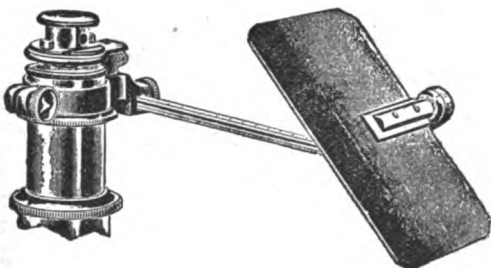
REMEMBER OUR DISCOUNT.



7077/132



7077/83



7077/133



7077/72



7077/123

- 7077/122—**Microscope Accessories. Neutral Tint Glass Camera Lucida No. 340**..... 5 00
- \*7077/123—**Ditto. Wollaston's Camera Lucida. No. 341**..... 10 80
- \*7077/132—**Ditto. Camera Lucida, Abbe**..... 31 65
- \*7077/133—**Ditto. Camera Lucida, Abbe, simple form**..... 19 00
- \*7077/134—**Ditto. Camera Lucida, Abbe Prism. In this camera the mirror is small, fixed and close to the Abbe Prism, making a very compact instrument and one very much more satisfactory and useful than the Wollaston Camera Lucida. (Illustr. p. 329.)**..... 12 65
- 7077/135—**Ditto. Camera Lucida, simple form. The camera lucida is attached to the edge of the eye-piece mounting, and while not so convenient to use as the more expensive form, good work can be done with it**..... 2 40
- \*7077/136—**Ditto. Camera Lucida, for drawing objects actual size. (Illustr. p. 329.)**..... 19 00
- I 7077/142—**Ditto. Paul Waechter's Condensers.**
- No. 81.—Large Abbe Condenser with Iris Diaphragm, specially adapted for Microscopes No. 7076/1 and 2**..... 45 00
- No. 82.—Medium Abbe Condenser with Stationary Iris Diaphragm, specially adapted for Microscopes No. 7076/3 and 4**..... 22 50
- No. 83.—Small Condenser with Stationary Iris Diaphragm, adapted for Microscopes No. 7076/5 and 6**..... 15 00
- \*I 7077/143—**Ditto. Paul Waechter's Cylinder Iris Diaphragm. It can be adapted to any stand, also of old construction, in place of the cylinder diaphragm. (Illustr. p. 329.)**..... 9 00

**I 7077/144—Microscope Accessories. Paul Waechter's Polarization Apparatus.**

**No. 85.**—This apparatus consists of 2 Nicol's Prisms; Polariser for insertion in the Diaphragm Holder of Stands No. 7076/1, 2, 3, 4, 5 and 6; Analyser above the eye-piece..... \$ 27 00

**No. 86.**—Same as No. 85. Analyser with graduated circle..... 33 75

**No. 87.**—Polarization apparatus with graduated circle and arrangement for saccharimetric measurements, consisting of 2 Nicol's Prisms, Observation Tube and 2 Quartz Plates. For Stands No. 7076/1, 2, 3, 4, 5 and 6. It can be used (1) as a polarization apparatus, (2) as a Saccharimeter and (3) as a Diabetometer..... 48 75

**I 7077/145—Ditto. Collection of eight Selenite and Mica Plates..... 11 25**

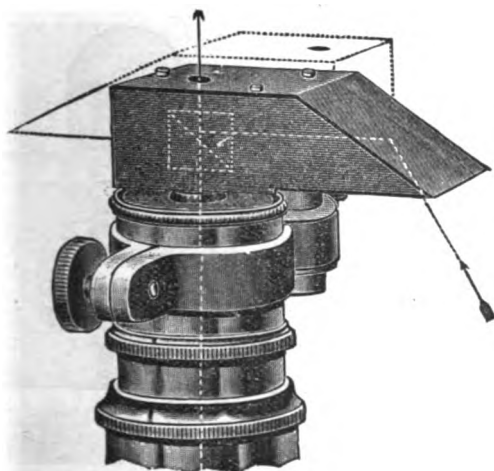
**7077/146—Ditto. Spencer Lens Co.'s.**

**Abbe Condenser, 1.20 Numerical Aperture..... 8 30**

**Abbe Condenser, 1.40 Numerical Aperture..... 11 65**

**Spencer's Achromatic Condenser, Dry, 175°..... 75 00**

**Spencer's Achromatic Condenser, Oil Immersion, N. A. .... 75 00**



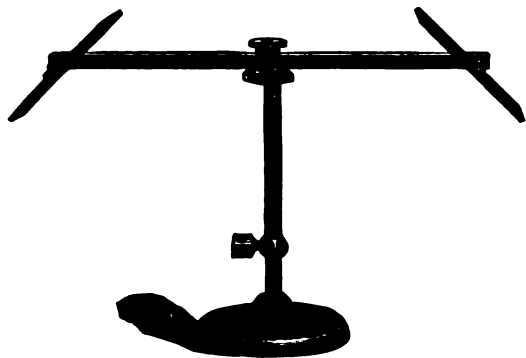
7077/134



7077/143



7077/147



7077/136



7077/149

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*7077/147—Ditto. Abbe Condenser with Iris Diaphragm, 1.20 N. A. Largest lenses with patch stop, blue glass and ground glass discs and swinging carrier for same; No. 348..... 16 65**

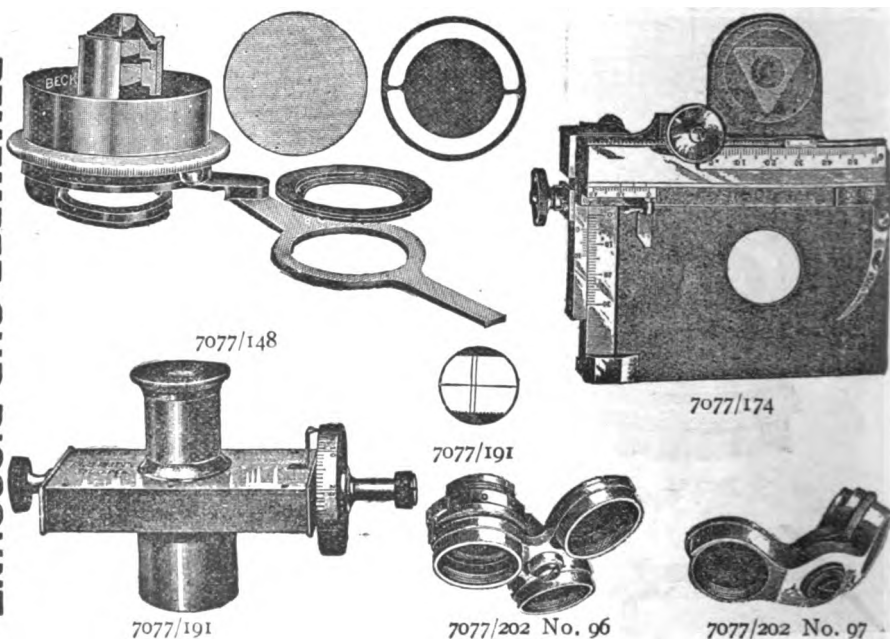
**\*7077/148—Ditto. New Achromatic Condenser, Aperture 1 N. A. Aplanatic Aperture 9 N. A. with Iris Diaphragm, one blue and one ground glass disc; No. 350. (Illustr. p. 330)..... 47 50**

**\*7077/149—Ditto. Swinging Substage Arm No. 352, with spiral focusing adjustment for carrying No. 7077/147 and 148..... 11 65**

The cost of attaching fitting No. 7077/149 to a microscope is usually from \$4 00 to \$6 00. The instrument should be sent us.

- I 7077/172—**Microscope Accessories. Paul Waechter's new Mechanical Stage**, for Stands No. 7076/1 and 2. It admits of two movements at right angle to each other in the plane of the object and the extent of these movements may readily be ascertained by referring to the scales. **No. 91**..... \$ 32 50
- I 7077/173—Ditto. **Paul Waechter's Circular Object Stage**, which may be rotated and centered with respect to the optical axis. No. 92..... 27 50
- \*7077/174—Ditto. **Removable Mechanical Stage, No. 371**, with very delicate micrometer movements in two directions and graduated scales for measuring amount of movement. This stage can be instantly attached or removed from almost any microscope. In ordering specify what microscope this stage is to fit..... 30 00
- I 7077/182—Ditto. **Paul Waechter's Eye-piece Micrometer, No. 101**. 5 mm. divided in 50 parts, for insertion in any eye-piece..... 2 25
- 7077/183—Ditto. **Spencer Lens Co.'s Eye-piece Micrometer**, circular glass 1/100 and 1/1000 inch..... 2 40

REMEMBER OUR DISCOUNT.



- 7077/186—**Microscope Accessories. Stage Micrometer**, ruled to 0.1 and 0.01 mm. .... 5 55
- 7077/187—Ditto. **Stage Micrometer**, ruled to 1/100 and 1/1000 inch..... 3 95
- \*7077/191—Ditto. **Micrometer, Filar**, adapted to any tube. In case..... 71 25
- 7077/192—Ditto. **Micrometer, Filar**, medium size. This micrometer is similar to the preceding, but smaller, without comb in the field and having the reference cross-hair fixed. In case..... 50 65
- \*I 7077/202—Ditto. **Paul Waechter's Nose-pieces.**
- No. 95—Nose-piece for 4 Objectives..... 20 25
- No. 96—Nose-piece for 3 Objectives..... 15 00
- No. 97—Nose-piece for 2 Objectives..... 11 25
- \*7077/203—Ditto. **Spencer Lens Co.'s Revolving Nose-pieces**, for quickly changing objectives. Made with society screw and carefully centered to the optical axis. A stop (or click) holds each in position. (Illustr. p. 331.)
- Double Nose-piece, nickel-plated..... 8 30
- Triple Nose-piece, nickel-plated..... 12 50
- 7077/204—Ditto. **"G" Nose-pieces.**
- Double Nose-piece in bronze..... 7 10
- Triple Nose-piece in bronze..... 11 25
- Ditto. **Watch Glasses**. See also Glass Blocks No. 2169/21.

**\*7077/212—Microscope Accessories. Watch Glasses, Syracuse Solid.**

Plain. Each,  $7\frac{1}{4}$  cts; per doz..... \$ 0 75  
 With ground edge. Each,  $12\frac{1}{4}$  cts; per doz..... 1 25

**\*7077/221—Ditto. Mounting Stand, with lamp, 5 mm. burner and separating sand bath.**

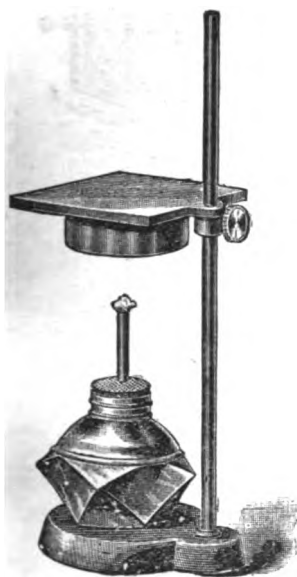
Glass Spirit Lamp, No. 1, with extinguisher, 5 mm. burner..... 3 15  
 Glass Spirit Lamp, No. 2, with extinguisher, 7 mm. burner..... 87  
 Glass Spirit Lamp, No. 3, with extinguisher, 12 mm. burner..... 1 05  
 Glass Spirit Lamp, No. 3, with extinguisher, 12 mm. burner..... 1 25

**\*7077/232—Ditto. Dissecting Knives with ebony handles.**

Cutting edge, 51 45 38 31 25 19 mm.  
 Each, \$ 0 40 31 31 31 31 31

7077/203  
Triple.7077/203  
Double.

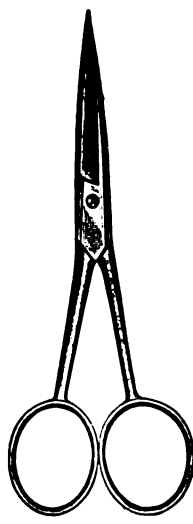
7077/212



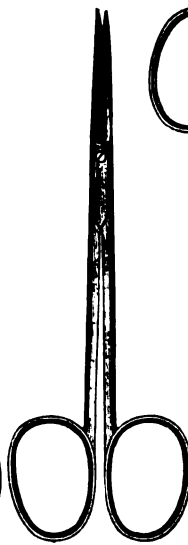
7077/221



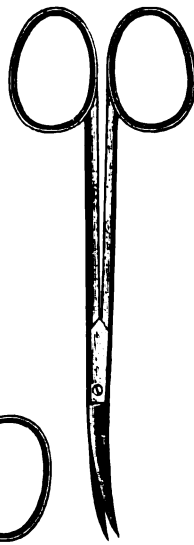
7077/242



7077/252 &amp; 253

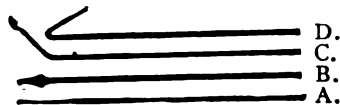


7077/255



7077/254

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



7077/243



7077/232

**\*7077/242—Microscope Accessories. Holders for Dissecting Needles, bone handle, with four Needles.**

Each, 18 cts; per doz..... 1 95

**\*7077/243—Ditto. Dissecting Needles.**

	A	B	C	D
Dozen, \$	12	20	16	16

**\*7077/252—Ditto. Dissecting Scissors, steel, 115 mm. long; straight....**

31

**\*7077/253—Ditto. Dissecting Scissors, steel.**

	100 mm.	115 mm.	125 mm.	150 mm. long.
Each, \$	0 48	53	58	63

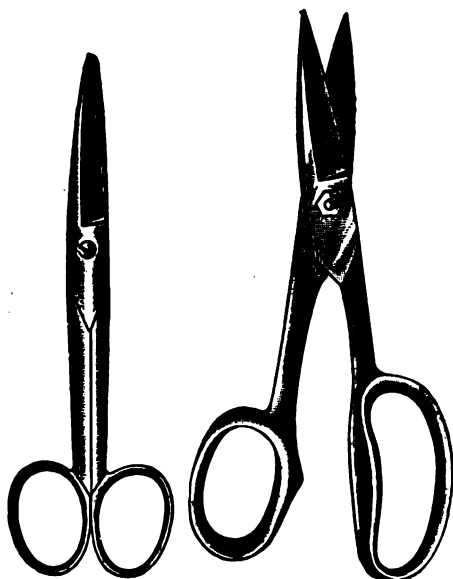
**\*7077/254—Ditto. Dissecting Scissors, steel, curved, 115 mm. long....**

75

**\*7077/255—Ditto. Dissecting Scissors, steel, straight, 115 mm. long....**

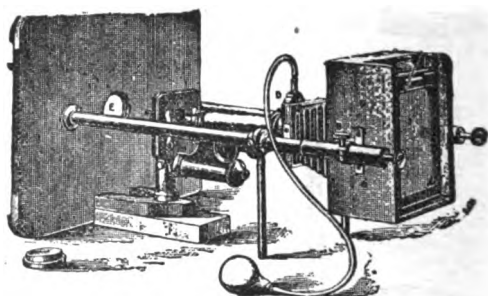
62½

- \*7077/256—**Microscope Accessories. Dissecting Scissors, steel,**  
straight, one blunt point; 115 mm. long..... \$ 0 90  
\*7077/257—**Ditto. Cartilage Shears, steel, nickel-plated, 20cm. long; each** 3 75



7077/256

7077/257



7077/305

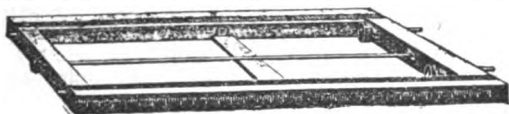
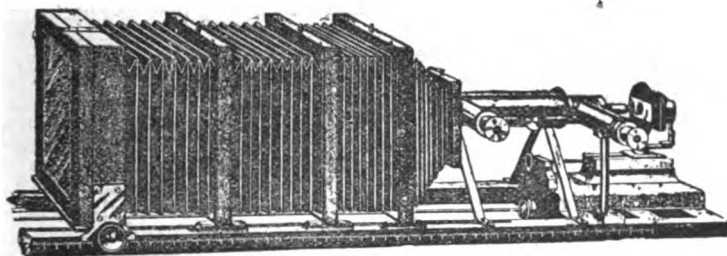
- \*7077/305—**Microscope Accessories. Universal Photo-Micrographic Camera.** It can be used either as a vertical or horizontal Camera combined. Micrometer adjustments for focusing. Accurate time shutter for regulating length of exposure without jar to the Camera. It can be used with any microscope. The only first class Photo-Micrographic Camera at a moderate price. The illustration shows the Camera in horizontal position.

The great ease with which a Photo-Micrographic copy can be made from minute objects, the entire simplicity of the process where proper apparatus is used, its cheapness and the great values of the results obtained, have created a demand for a thoroughly practical and low priced Photo-Micrographic Camera suitable for all classes of work requiring either a vertical or horizontal Instrument.

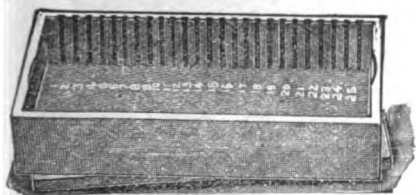
For the photographing of liquids and many other objects a vertical Camera is essential; while in other cases where direct light is desirable without the use of the Mirror, a horizontal Camera must be used. In the new Universal Camera both instruments are combined. The Camera itself rests on two rigid brass pillars which are supported on a heavy cast-iron base. The distance of the Camera from the stage of the microscope and therefore the size of the image is adjustable by loosening the screw "B," and sliding the top of the Camera up and down between the standards. A most accurate and delicate focus can afterward be obtained by turning the two micrometer screws "A. A.," which raise and lower the Camera in the most delicate manner. A time and instantaneous shutter is applied to the front of the Camera at "D." This shutter is controlled by a bulb so that the exposure can be opened and closed without the slightest jar to the instrument. The ground glass slides in grooves as shown at "C," and the plate holder is firmly clamped in position behind it while the picture is being taken. When it is desirable to use the Camera in a horizontal position it is simply necessary to rest it on its side, when the two upright supports, together with the base will hold it in a perfectly rigid manner. The beam of light is sent through the opening at "E" in the base and the Camera is then a horizontal one of the most satisfactory kind. This Camera can be adjusted to any microscope.

Price of the Universal Photo-Micrographic Camera without Microscope, but complete in every way with ground glass, double 101.5x 127 mm. plate-holder, time and instantaneous shutter.....

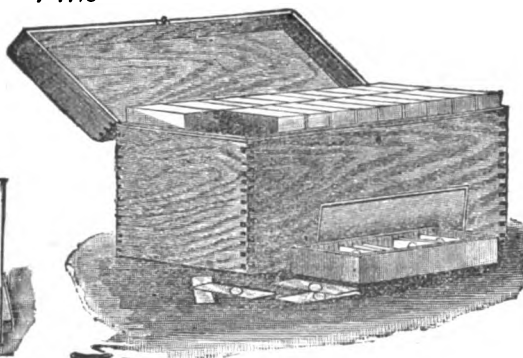
- \*7077/306—**Microscope Accessories. Professional Photo-Micro-Camera**, with tapering bellows and one section with ground glass, posterior and anterior rectangular tubes, one frame section, complete adjustments, one 16.5x21.5 cm. plate-holder, one achromatic amplifier. \$ 182 50  
**Additional Sectional Bellows and Frame, extra**..... 25 00  
**Mechanical Stage** with grooved pulleys for cords in place of plain stage, **extra**..... 33 30  
**Plane and Concave Mirror, with attachments, extra**..... 6 65
- \*7077/321—Ditto. **Portable Cabinet, Pillsbury's**, containing 20 boxes for 500 slides..... 6 65
- \*7077/322—Ditto. **Slide Boxes**, of light wood, with cover; for 25 slides, 25x75 mm., with index on the inside, with label on the outside with space for titles. Label is visible when box is in position to keep slides horizontal..... Each, 9c; per 100, 8 12
- Ditto. **COVER GLASS**. See No. 4480, etc.  
Ditto. **GLASS SLIDES**. See No. 8420, etc.



7077/306



7077/322



7077/321

- I 7077/332—**Microscope Accessories. Paul Waechter's Microtomes.**  
**No. 89—Microtome** with Object Carrier, revolving about the axes. Freezing arrangement with blast, Micrometer Screw; one Knife, 16 cm. cut, in case; two knives, one with 11cm. cut (for frozen objects) and one with 17 cm. cut in case. Complete..... 171 00  
**No. 90—Microtome** with simple Object Carrier, Micrometer Screw, Knife, 16 cm. cut, in case..... 112 50
- \*7077/333—Ditto. **University Microtome.**

This Microtome which is manufactured for us by the **Optische Anstalt (Optical Manufacturing Company) of Jena**, is the best instrument of its kind made in Germany, and is in use in many of the Medical Colleges in Europe. It is supplied with a very delicate Micrometer Screw, and graduated wheel for elevating the specimen to be cut. The clamp for holding the specimen, is adjusted on three swivel joints which can be firmly clamped in any position. The knife

(Continued p. 334.)

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

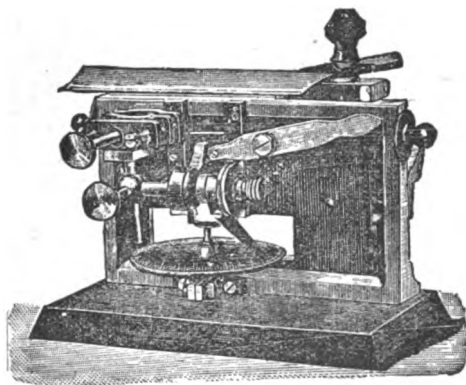
**\*7077/333—Microscope Accessories. University Microtome.** (Continued.) is firmly clamped to the heavy sliding carrier which plays in an accurately planed groove. The instrument is beautifully finished in every particular and is specially recommended for laboratory work. All these Microtomes are supplied with the finest quality knives made specially for us in Heidelberg.

<b>No. 543—University Microtome</b> , as described above, length of bed, 30 cm., complete with clamp for holding specimens, drip-pan and genuine Heidelberg knife after Weikert, with cutting edge 16 cm. ....	\$ 90 00
<b>No. 544—University Microtome</b> , same as No. 543, but with 20 cm. length of bed and Heidelberg knife after Weikert, with cutting edge 12 cm. ....	63 30
<b>No. 545—University Microtome</b> , same as No. 543, but with 17 cm. bed and Heidelberg knife after Weikert, with 12 cm. cutting edge	54 15
<b>No. 546—Freezing Attachments for Microtomes</b> Nos. 543 to 545, with improved atomizer, double bulb, drip tube and bottle, all metal parts nickel-plated. ....	14 15

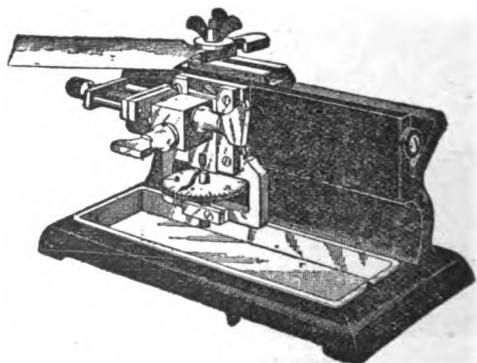
**\*7077/334—Ditto. Universal College Microtome No. 550.**

In the new Universal College Microtome we offer a perfectly made instrument, with all forms of adjustment necessary for laboratory work at an extremely low price. The frame of the Microtome is of cast-iron and exceedingly heavy and rigid. The "V" block is of hard bronze and is arranged with clamp screw, giving adjustments to the knife in three different directions, so that the knife can be firmly held in any position or angle desired. The object carrier or clamp is rigidly and solidly built. It has universal movements in three directions, and it can be raised or lowered by the delicate Micrometer Screw, revolves on its own spindle and can be tilted from side to side at any desired angle with the knife. Length of bed 20 cm., total height 14 cm., vertical adjustment  $2\frac{1}{2}$  cm., diameter of graduated disc 5.7 cm., pitch of screw 5 mm., with finest imported hand-forged knife, 12 cm. cutting edge. Weikert pattern. ....

33 30



7077/333



7077/334 &amp; 335

**\*7077/335—Ditto. Universal College Microtome No. 551.** Same as No. 7077/334, but with full universal movements to clamp in four directions, giving every possible adjustment to object. ....

46 65

**7077/336—Ditto. Freezing Apparatus for Microtomes** Nos. 7077/334 and 335. ....

15 00

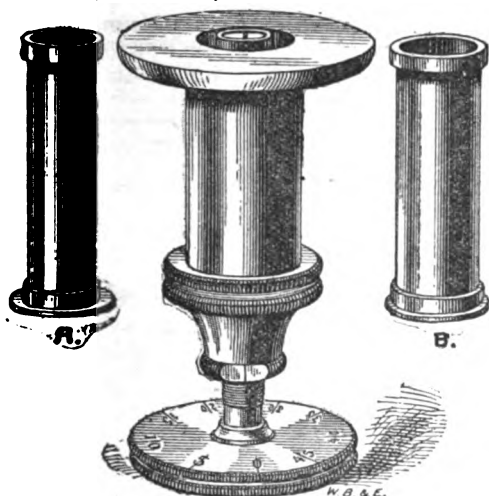
**\*7077/337—Ditto. Pasteur Microtome No. 537.**

This microtome, which is patterned after the French instrument, has many decided advantages over other hand models and is the cheapest instrument of its kind that has ever been offered. It has a very delicate micrometer screw with graduated head for elevating the imbedded specimen and two different sized cylinders as shown in cut "A" and "B" which fit accurately within the core of the microtome, reducing the size of the core as desired and allowing any sized specimen to be firmly imbedded without the use of a clamp screw.

(Continued p. 335.)



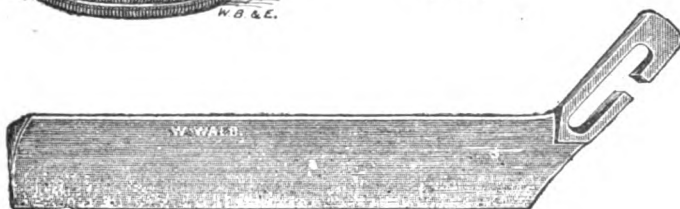
**\*7077/337—Microscope Accessories. Pasteur Microtome No. 537.**  
(Continued.)



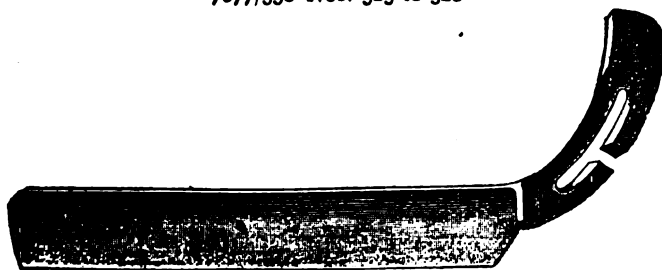
The use of the clamp screw which is common to all other hand microtomes is a distinct disadvantage, as it compresses and distorts the specimen, and is liable to tear delicate tissues. The Pasteur Microtome is beautifully finished and nickel-plated, and can be supplied to schools and colleges in large quantities at very low rates. **Pasteur Microtome, nickel-plated ..**

**\$ 6 50**

7077/337



7077/338 Nos. 525 to 528



7077/338 Nos. 529 to 532

**\*7077/338—Microscope Accessories.**

**MICROTOME KNIVES, HEIDELBERG MAKE.**

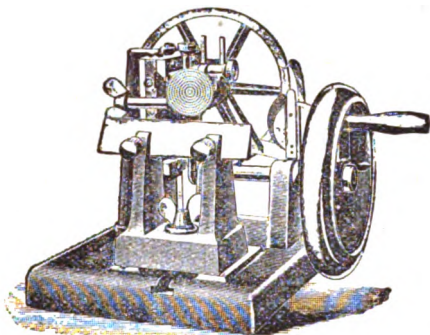
These justly celebrated knives are made expressly for us in Heidelberg, and have a world-wide reputation, being far superior in temper and shape to the knives usually supplied, which are generally made of inferior steel and ground by inexperienced workmen.

- |  |       |
|--|-------|
| <b>525.</b> Microtome Knife after Weikert, cutting edge 24 cm., in Morocco case..... | 22 50 |
| <b>526.</b> Microtome Knife after Weikert, cutting edge 16 cm., in Morocco case..... | 13 30 |
| <b>527.</b> Microtome Knife after Weikert, cutting edge 12 cm., in Morocco case..... | 10 80 |
| <b>528.</b> Microtome Knife after Weikert, cutting edge 8 cm., in Morocco case.....  | 5 00  |
| <b>529.</b> Microtome Knife after Thoma, cutting edge 24 cm., in Morocco case.....   | 25 00 |
| <b>530.</b> Microtome Knife after Thoma, cutting edge 16 cm., in Morocco case.....   | 16 25 |
| <b>531.</b> Microtome Knife after Thoma, cutting edge 12 cm., in Morocco case.....   | 12 50 |
| <b>532.</b> Microtome Knife after Thoma, cutting edge 8 cm., in Morocco case.....    | 5 00  |

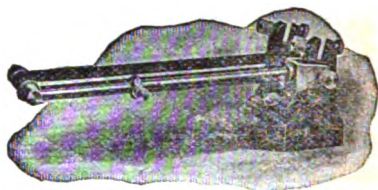
**APPROXIMATE EQUIVALENTS:**

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1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

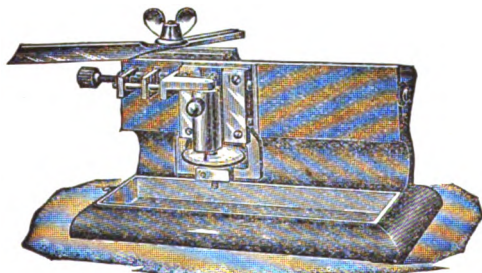
7077/339—Microscope Accessories. C. F. Betting's celebrated Microtome .....	\$ 23 00
*7077/352—Microscope Accessories. Minot's Automatic Rotary Microtome, complete with Knife, in plain wooden packing case..	131 90
*7077/353—Ditto Ribbon Carrier .....	12 65
*7077/354—Ditto. Object Clamp .....	4 75
7077/355—Ditto. Object Discs, small, medium or large; each.....	80
7077/356—Ditto. Extra Knives, 225 mm. blade, without handle. ....	9 50
7077/357—Ditto. Adjustable Knife Block for Celloidin.....	15 80
7077/358—Ditto. Support for Knife, to use all parts of edge.....	3 95



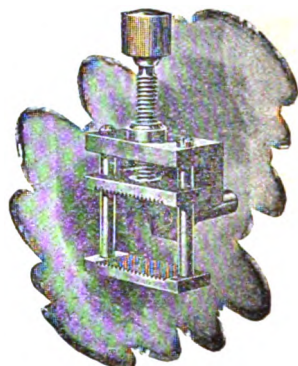
7077/352



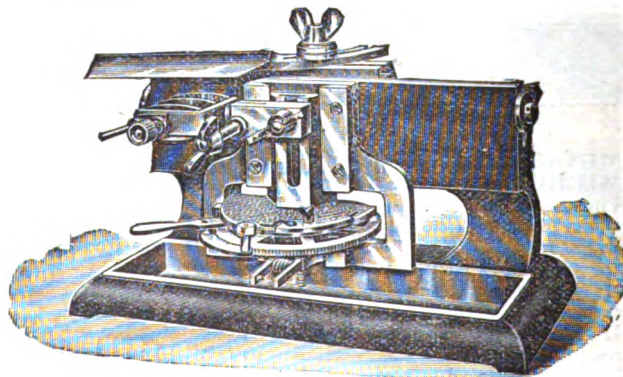
7077/353



7077/374



7077/354

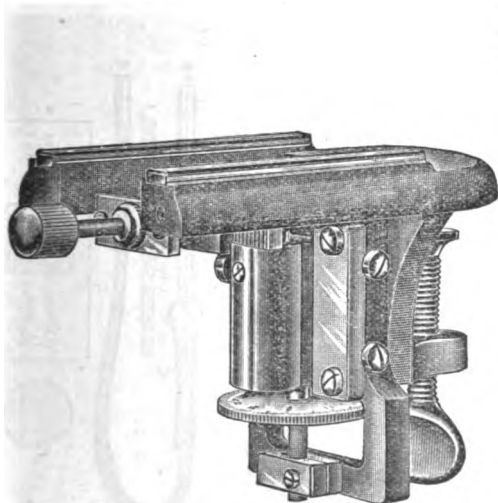


7077/372

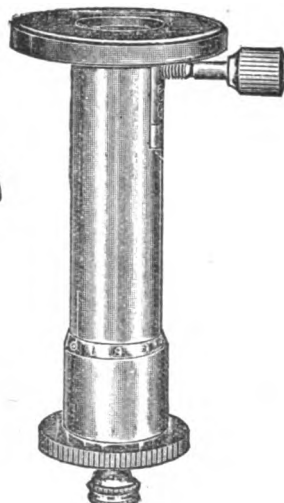
*7077/372—Microscope Accessories. Medium Laboratory Microtome, complete with knife and knife holder.....	76 75
7077/373—Ditto, ditto, with Shanked Knife.....	76 75
*7077/374—Ditto. Student Microtome; complete with Knife and Knife Holder.....	34 80
With Knife .....	34 05
If provided with universal clamp in place of regular, same will be furnished at an additional cost of .....	3 95

REMEMBER OUR DISCOUNT.

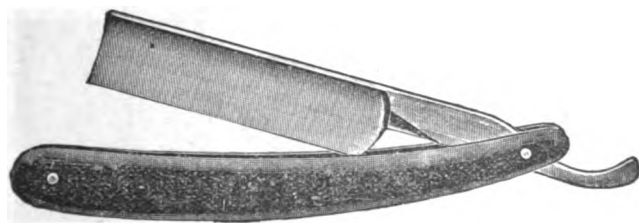
*7077/375—	Microscope Accessories. Table Microtome.....	\$ 19 00
*7077/376—	Ditto. Hand Microtome.....	7 90
*7077/392—	Ditto. Section Razors, with vulcanized folding handle; cutting edge 75 mm. long, finest quality.....	1 85
I 7077/421—	Ditto. Paul Waechter's Drawing Apparatus. No. 93. Drawing Apparatus, according to Oberhaeuser.....	30 00
	No. 94. Drawing Apparatus, according to Abbe.....	26 25
I 7077/431—	Ditto. Paul Waechter's Iris Diaphragm No. 98.....	7 50
7077/432—	Ditto. Spencer Lens Co.'s Iris Diaphragm furnished when desired in mounting with stops for dark ground illumination and blue glass.....	8 30



7077/375



7077/376



7077/392



7077/451 A

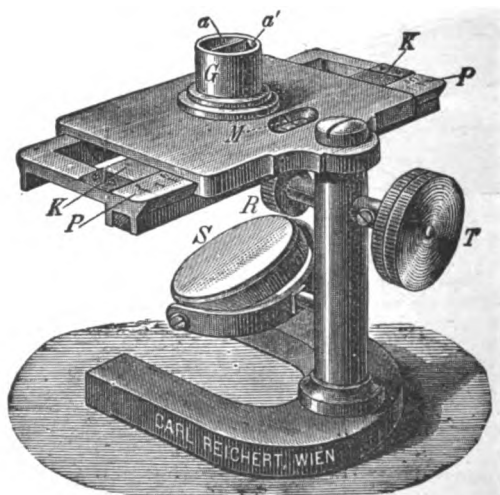
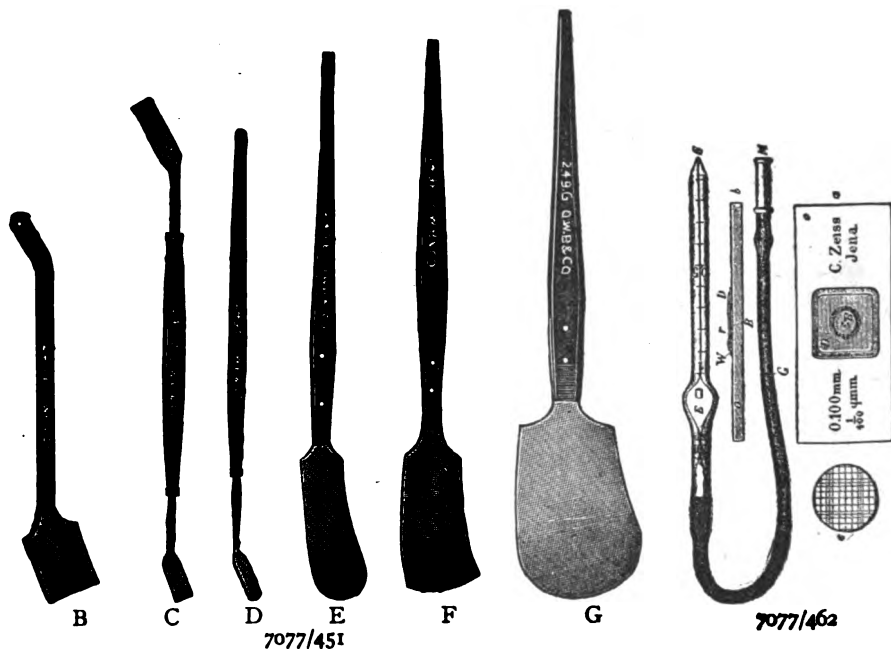
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

7077/433—	Ditto. Spencer Lens Co.'s Iris Diaphragm to fasten on sub-stage ring for use at or near the plane of stage.....	6 65
I 7077/441—	Ditto. Paul Waechter's Cover Glass Gauge No. 99.....	22 50
***7077/451—Ditto. Section Lifters. (6 Illustr. p. 338.)		
A.—	German Silver Blades; each.....	\$0 24
B.—	" " " ".....	16
C.—	" " " ".....	50
D.—	" " " " Ebony Handle; each.....	37½
E.—	" " " " " " ".....	45
F.—	" " " " " " ".....	45
G.—	" " " " " " ".....	50
I 7077/456—	Ditto. Paul Waechter's Objective Micrometer No. 100; 1 mm. graduated in 100 parts. Mounted on a slide, in case.....	7 50
I 7077/461—	Ditto. Paul Waechter's Haemometer according to Thoma No. 102.....	22 50

**\*7077/462—Microscope Accessories.****Haemacytometer, Thoma-Zeiss.**

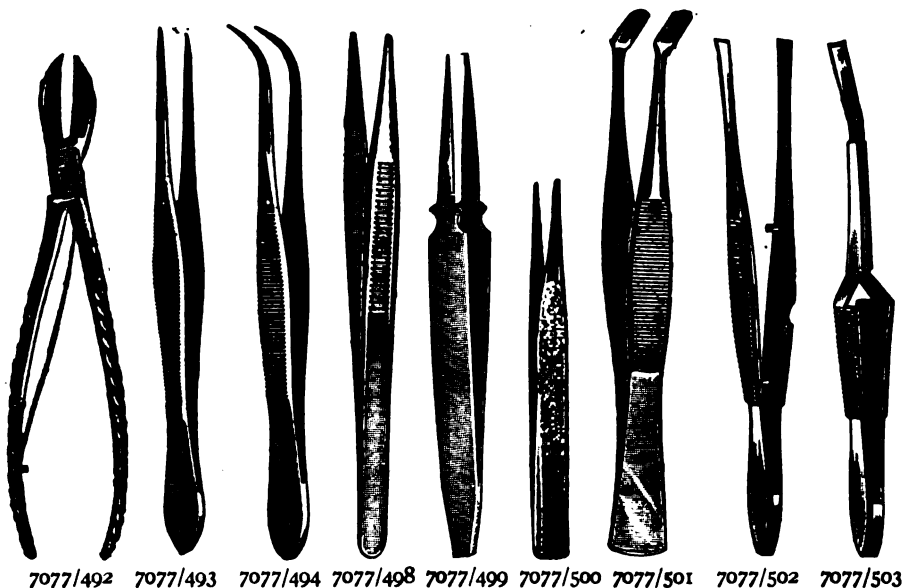
A.—Haemacytometer, in case, with one pipette, for counting red corpuscles only.....	\$ 17 35
B.—Haemacytometer, in case, with one pipette, for counting white corpuscles only.....	17 35
C.—Haemacytometer, in case, with two pipettes, for counting red and white corpuscles.....	24 00
D.—Extra Pipette for red corpuscles, 1:100.....	6 00
E.—Extra Pipette for white corpuscles, 1:10.....	6 00

REMEMBER OUR DISCOUNT.



*7077/463—Microscope Accessories. Fleischl's Haemometer.....	40 80
7077/464—Ditto. Haemaglobinometer, Gower's, for determining the percentage of Haemoglobin in blood, in case .....	4 15
7077/471—Ditto. Spencer Lens Co.'s Stage Micrometer, 1-100 and 1-1000 inch.....	4 15
1, 1-10 and 1-100 mm .....	5 80

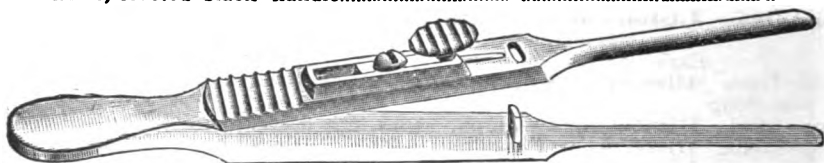
<b>7077/481—Microscope Accessories. Spencer Lens Co.'s Plain Cylinder Diaphragm</b> to fit in substage-ring with three metal caps of different apertures.....		\$ 3 30
<b>Ditto. Forceps generally—See No. 5400, etc.</b>		
<b>7077/491—Ditto. Dieffenbach's Artery Forceps</b> , about 55 to 60 mm. long. Per doz, \$6 00; each.....		60
<b>*7077/492—Ditto. Liston's Bone Cutting Forceps.</b>		
200 mm.	230 mm. long	
Each \$3 10	3 35	
<b>*7077/493—Ditto. Dissecting Forceps, steel, fine, straight points</b> , 115 mm. long.....		50
<b>*7077/494—Ditto. Dissecting Forceps, steel, fine curved points</b> .....		50
<b>7077/495—Ditto. Dissecting Forceps, steel, medium fine straight points</b> , same shape as No. 7077/493, 100 mm. long.....		50
<b>7077/496—Ditto. Dissecting Forceps, steel, medium fine curved points</b> , same shape as 7077/494, 105 mm. long.....		50
<b>7077/497—Ditto. Dissecting Forceps, steel, heavy straight points</b> , same shape as 7077/493, 115 mm.		
Each \$0 62	130 mm. 75	145 mm. long 80



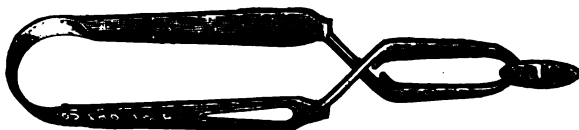
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3000 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

<b>*7077/498—Ditto. Dissecting Forceps, steel, for vertebrate work; without guide-pin; 125 mm. long</b> .....		50
<b>*7077/499—Ditto. Dissecting Forceps, steel, with fine points</b> , 95 mm. long.....		31
<b>Ditto—Dissecting Forceps, steel, blunt points. See No. 5400.</b>		
<b>*7077/500—Ditto. Dissecting Forceps, with fine points</b> , 110 mm. long.		
medium	heavy	
Each \$0 25	20	
<b>*7077/501—Ditto. Cover Glass Forceps, steel, 100 mm. long</b> .....		80
<b>*7077/502—Ditto. Cover Glass Forceps, steel, 120 mm. long</b> .....		75
<b>*7077/503—Ditto. Cover Glass Forceps, steel, 100 mm. long; self-closing</b> .....		1 00
<b>*7077/504—Ditto. Cornet's Cover Glass Forceps. Only a small surface of the cover is grasped by the end of the blades. (Illustr. p. 340).</b>		62
<b>*7077/505—Ditto. Ehrlich's Cover Glass Forceps, having long flat blades which come together accurately, so that covers are held firmly on the edge during the operation of making a blood spread. Length 135 mm. (Illustr. p. 340)</b> .....		1 55
<b>*7077/506—Ditto. Cover Glass Forceps, Novy's, without lock. (Illustr. p. 340)</b> .....		94

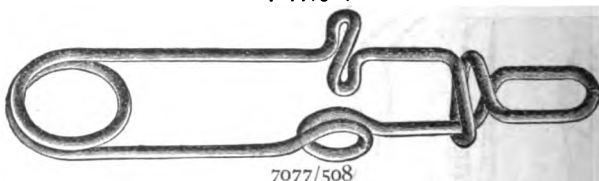
7077/507—Microscope Accessories. Cover Glass Forceps, Novy's, same as 7077/506, but with lock .....	\$ 1 25
*7077/508—Ditto. Stewart's Cover Glass Forceps .....	42
*7077/509—Ditto. Stewart's Cover Glass Forceps, with ring .....	30
7077/510—Ditto. Collapsible Tubes containing 20 cc. Canada Balsam in Xylol, each .....	25
*7077/511—Ditto. Tenaculum. Flat steel shank terminating in tapering hook; riveted black handle .....	31



7077/505



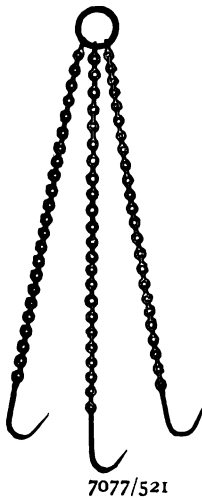
7077/504



7077/508



7077/509



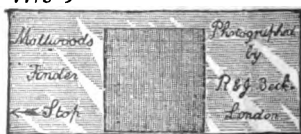
7077/521



7077/511



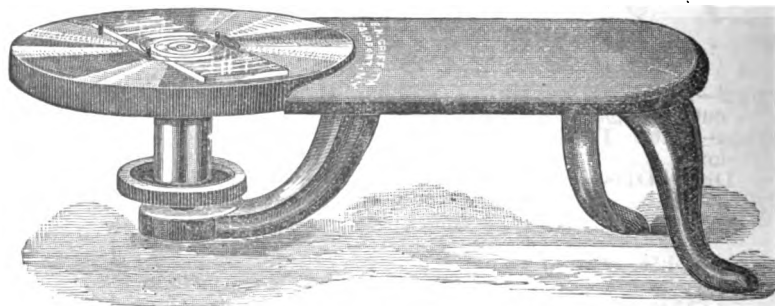
7077/523



7077/522



7077/506



7077/525

*7077/521—Microscope Accessories. Hooks and Chains. Hooks with sharp points, nickel-plated .....	30
*7077/522—Ditto. Maltwood Finder in case .....	5 80
*7077/523—Ditto. Wenham's Compressorium, for use with Wenham's Parabola .....	2 50
7077/524—Ditto. Holman's New Parallel Compressor .....	10 00
*7077/525—Ditto. Turn Table No. 566, W. B. & E.'s Improved Centering, very delicate and accurate .....	4 15

REMEMBER OUR DISCOUNT.

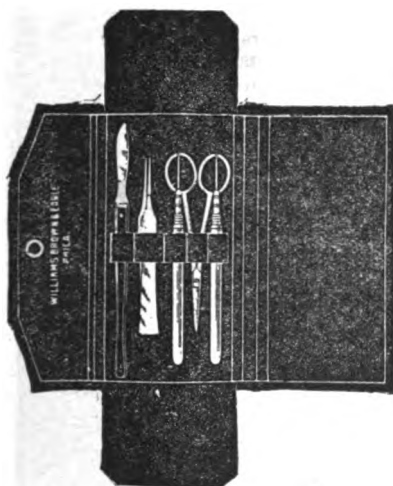
**\*7077/526—Microscope Accessories. Dissecting Instruments**  
for work in Anatomy, Botany, Histology, Biology, etc. These sets are supplied with instruments of high quality and superior finish. The cases are very durable and thoroughly well made, and are arranged to fold up flat and compactly with side flaps to protect the instruments.

**\*No. 520 A.** Contains 1 scalpel, small, medium or large,  
1 pair fine pointed straight forceps,  
2 long bone handle needle holders,  
1 pair fine pointed microscopic scissors,

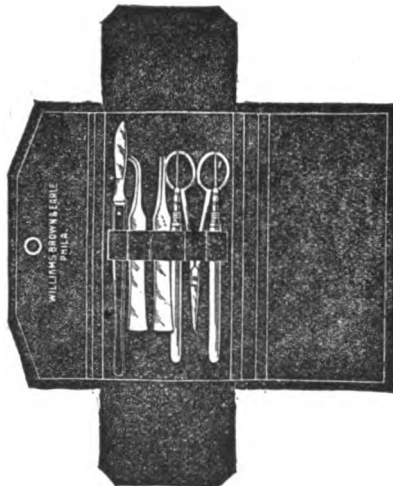
Price, complete in folding pocket case..... \$ 1 65

**\*No. 520B.** Contains 1 scalpel, small, medium or large,  
1 pair fine pointed straight forceps,  
1 pair fine pointed curved forceps,  
1 pair fine pointed microscopic scissors,  
2 long bone handle needle holders,

Price, complete in folding pocket case..... 1 90



No. 520A

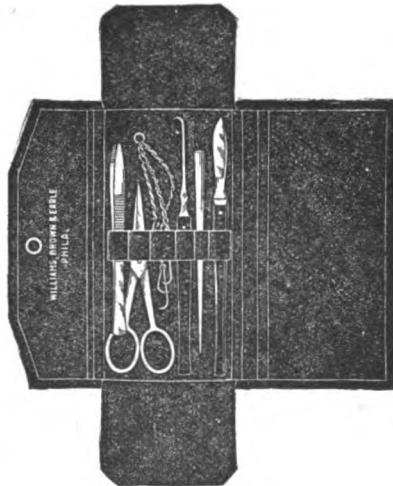


No. 520B

7077/526



No. 520C



No. 520H

7077/526

**No. 520BB.** Same as No. 520B, but with 2 scalpels and only  
1 pair forceps, either straight or curved.....

1 90

**\*No. 520C.** Contains 1 scalpel,  
1 pair fine quality straight forceps,  
1 pair fine quality straight scissors,  
2 bone handle needle holders,

Price, complete in folding pocket case..... 2 50

**APPROXIMATE EQUIVALENTS:**

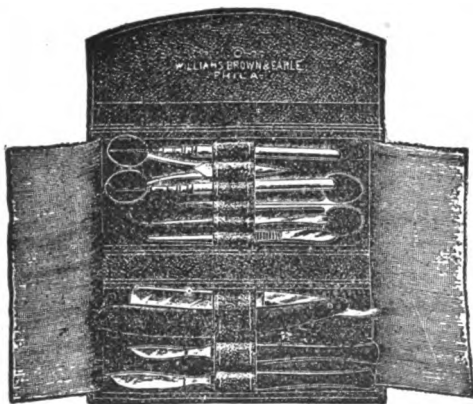
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.



\*\*\*\*\*7077/526—**Microscope Accessories. Dissecting Instruments** (Continued).

- No. 520D.** Contains 1 scalpel,  
1 pair fine quality straight forceps,  
1 pair fine quality curved forceps,  
1 pair fine quality straight scissors,  
2 bone handle needle holders,  
Price, complete in folding pocket case..... \$ 3 30
- \*No. 520H.** Contains 1 scalpel,  
1 german silver blow-pipe,  
1 tenaculum,  
1 pair chain hooks,  
1 pair heavy dissecting scissors,  
1 pair heavy dissecting forceps,  
Price, complete in folding pocket case (Illustr. p. 341)..... 3 30
- \*No. 520J.** Contains 2 bone handle needle holders,  
1 pair heavy dissecting scissors,  
1 pair fine point straight scissors,  
1 pair fine point straight forceps,  
1 pair fine point curved forceps,  
1 fine quality section razor,  
2 fine quality scalpels,  
Price, complete in double folding pocket case, with chamois flaps..... 6 65

REMEMBER OUR DISCOUNT.



7077/526 No. 520J



7077/526 No. 521C



7077/526 No. 521D

**\*No. 521C.** This set was designed by **Prof. W. F. Ganong, of Smith College**, and is especially adapted to botanical work. The form is extremely compact and convenient. The case is morocco covered and divided into two compartments, both closed by flaps with button snaps. The upper compartment contains the dissecting instruments, the lower the magnifying glass.

**\*No. 521C.** Contains 1 scalpel,  
1 pair fine pointed straight forceps,  
2 needles in cedar handles,  
1 finest quality rubber case magnifying glass,  
with two lenses,

Price, complete in morocco case..... 3 10

**\*No. 521D.** Contains 1 scalpel,  
1 pair fine pointed straight forceps,  
1 pair fine pointed straight scissors,  
1 pair bone handle needle holders,  
1 finest quality rubber case magnifying glass,  
with two lenses,

Price, complete in morocco case ..... 3 75

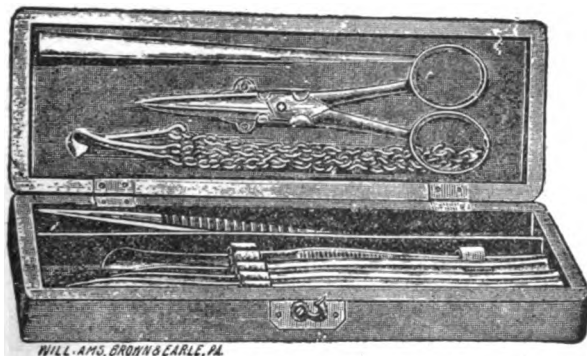


\*\*\*\*\*7077/526—**Microscope Accessories. Dissecting Instruments.**  
(Continued.)

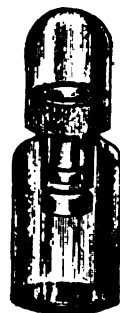
**\*No. 522.** These standard dissecting sets are specially designed for the use of medical students. The cases of wood, beautifully finished, and the instruments are of superior quality.

It contains 1 german silver blow-pipe,  
1 pair heavy dissecting forceps,  
1 set chain hooks,  
1 pair heavy dissecting scissors,  
1 tenaculum,  
1 medium size scalpel,  
1 large size scalpel,  
1 cartilage knife,

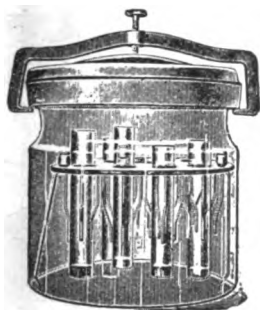
Price, complete in polished wood case..... \$ 4 15



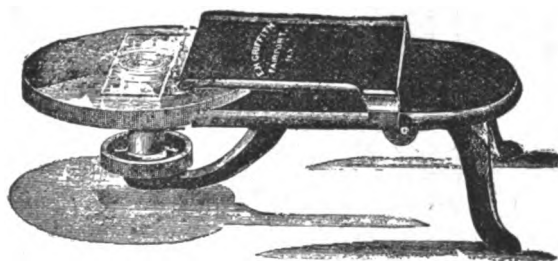
7077/526 No. 522



7077/528



7077/529



7077/527

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*7077/527—Microscope Accessories. Griffith's Self-Centering Turn Table, with Detachable Hand-rests.**

This turn table accomplishes its purpose perfectly. As will be seen in the illustration, a partially revolving disc is fitted into the plate, provided on its surface with two projecting studs. The slide is placed between these and forced by an internal spring against two stops, one for the width, the other for the length. This arrangement is quick acting and is not liable to get out of order.....

11 10

**\*7077/528—Ditto. Schultz' Dehydrating Apparatus.**

Specially adapted for hardening delicate tissues. The object is placed in a tube whose lower end is covered by an animal membrane. This tube is suspended from the neck of a bottle-shaped vessel and surrounded by another similar tube also diaphragmed.

Upon filling the tubes with a fluid of different density from that placed in the outer vessel, a slow osmotic action takes place, hardening the objects very gradually. Delicate tissues are not so apt to shrivel and collapse in this apparatus. For less sensitive objects, one of the tubes may be removed, when hardening proceeds much more rapidly. Diameter of inner tube, 10 mm.; capacity of vessel, 100 cc. Complete

2 00

**\*7077/529—Microscope Accessories. Thomas' Dehydrating Apparatus.** (Illustr. p. 343.)

Nine large glass tubes are supported in a vulcanite disc so as to be adjustable in height. This apparatus has a cover, fitting air-tight. Diaphragms of animal membrane are held in the lower end of the tubes by nicked metal clamps which may be removed by insertion of new diaphragms. Jar 20 cm. diam., 21 cm. deep. Tubes 1.8, 2.5 and 3 cm. diam. Complete.....

\$ 10 00

**\*7077/531—Ditto Brown's New Microscope Lamp.**

**No. 275**—Brown's New Microscope Lamp, with plain condensing lens.....

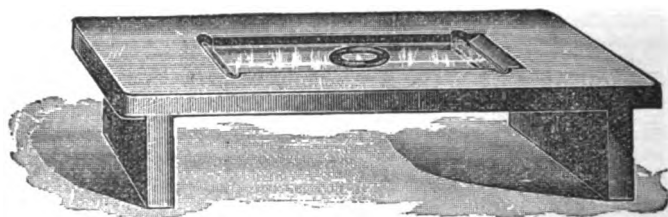
10 00

**No. 276**—Same as No. 275, but with compound condensing lenses.....

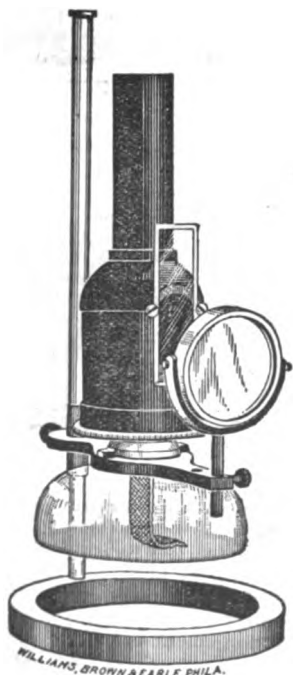
12 50

**\*7077/532—Ditto. Mounting Table. Van Cott's.....**

1 25



7077/532



7077/531



7078/1

**\*7078/1—Milk Testers, called Curtis' Babcock Farm Tester.**

With each machine is furnished a pipette, acid measure, a bottle of acid and directions. The pan revolves with the bottles. Sixty revolutions of the handle will give 700 revolutions to the bottles, which is sufficient speed for good work.

**No. A1**—4-Bottle Tester, complete.....

8 30

**No. A2**—6- " " ".....

10 00

**No. A3**—8- " " ".....

11 65

**REMEMBER OUR DISCOUNT.**

**\*7078/3—Milk Testers, called the Sweepstake Babcock.** Ball bearings. The most practical, highest speeded, easiest running tester, at a low price. Specially designed for dairy use. Speed 900 revolutions.

**No. 1—2-bottle, with necessary glassware, for milk test ..... \$ 6 00**

[illegible]

No. 3—2-bottle, with necessary glassware, for milk and cream test ....	7 00
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[illegible]

**\*7078/4—Milk Testers, Curtis' Babcock New Pattern, Style C, Iron and Steel.** The Tester shown in the illustration is in many respects a radical change from any other style of Babcock Tester that has ever been manufactured. The outside cylinder is made entirely of iron, top and bottom being cast, and the sides of the cylinder being heavy sheet iron. The top has a door for inserting and removing the bottles. The gearing is made heavy and durable. This is unquestionably the best hand-power tester produced.

No. C-1.	4-Bottle Tester, complete .....	16 65
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No. C-2. 6- " " " ..... 20 00

No. C-3. 8- " " " ..... 23 30

No. C-4. 10- " " " ..... 26 65

No. C-5.	15-	"	"	"	.....	30 00
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No. C-6.	20-	"	"	"	.....	35 00
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No. C-7. 30- " " " , ..... 40 00



7078/3



7078/4



7078/6



7078/14



7078/12

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*7078/6 - Milk Testers: Curtis' Babcock Motor Tester. Style F.

**This Tester is run by steam.**

No. F—I. 20 Bottles .....	53 00
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No. F-2.	24	.....	58 00
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No. F-3. 30 “ ..... 63 00

**\*7078/12—Milk Test Accessories. Acid Measure.** Graduated at 17.6 cc.

Each, 30c; per dozen. ....	2 85
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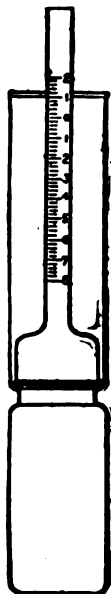
*7078/14—Ditto. Milk Bottles, 10% ; each, 33c; per dozen.....	3 35
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*7078/15—Milk Test Accessories. Cream Bottles; each, 50c; per dozen	\$ 5 00
*7078/16—Ditto. Cream Bottles, bulb neck; each, 50c; per dozen	5 00
7078/17—Ditto. Bottles for Skimmed and Butter Milk; each, 55c; per dozen	5 65
*7078/18—Ditto. Perfected Bottles for Skimmed Milk. (Patent No. 34,474, May 7th., 1901); each, \$1 25; per dozen	12 50
*7078/19—Ditto. Russian Test Bottles; each, 65c; per dozen	6 65
7078/20—Ditto. Russian Test Tubes; each, 80c; per dozen	8 30
7078/21—Ditto. Russian Test Tubes for Cream; each, 80c; per dozen	8 30

REMEMBER OUR DISCOUNT.



7078/22



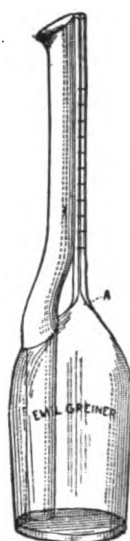
7078/19



7078/15



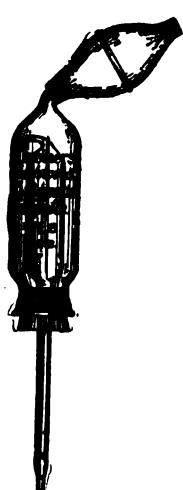
7078/16



7078/18



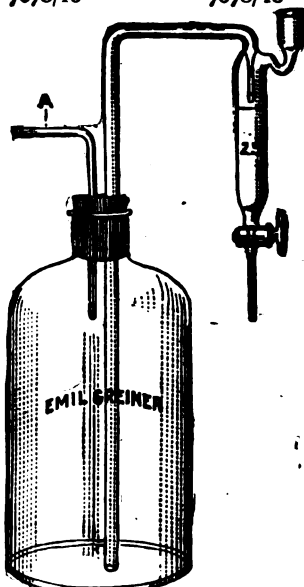
7078/23



7078/24



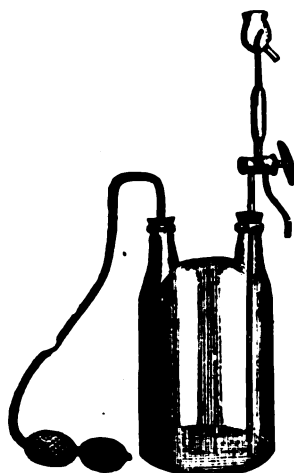
7078/25



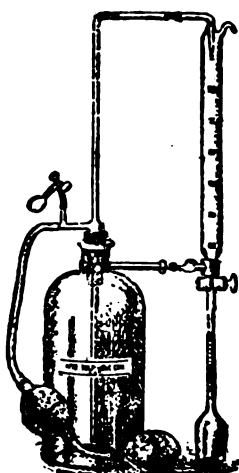
7078/26

*7078/22—Ditto. Milk Pipettes, graduated at 17.6 cc.; each, 40c; per dozen	4 00
*7078/23—Ditto. Greiner's Automatic Pipettes; each, \$1 50; per dozen	15 00
*7078/24—Ditto. Greiner's Improved Automatic Pipettes, latest pattern; each, \$1 50; per dozen	15 00
*7078/25—Ditto. Automatic Pipettes, with rubber caps, patented (Russian Pipettes); each, \$2 50; per dozen	27 00
*7078/26—Ditto. Greiner's Self-Acting Acid Pipette, for quick work.	6 50

*7078/27—Milk Test Accessories. Farrington's Automatic Acid Pipette, 17.6 cc.	
The Pipette alone.....	\$ 6 25
Complete with reservoir and rubber bulb.....	8 00
*7078/28—Ditto. Automatic Burette, for delivering six charges (17.6 cc.) sulphuric acid before refilling, with reservoir and clamp.....	9 00
*7078/29—Ditto, ditto, complete with double, rubber bulb.....	10 50
*7078/30—Ditto. Burette, with stop-cock, for acid, for 3 6 12 25 charges of acid, 17.6 cc. each.	
\$3 35 4 15 5 00 7 50	
7079/1—Milk Testers, Hicks', each.....	83



7078/27



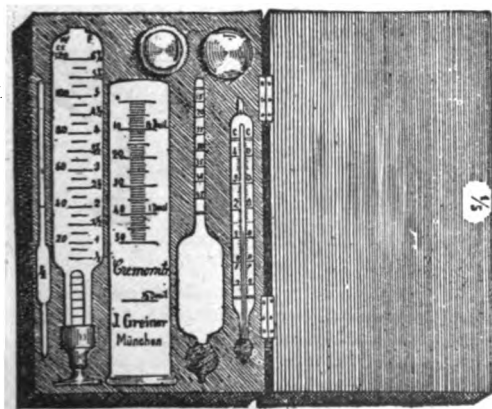
7078/28 &amp; 29



7078/30



7084



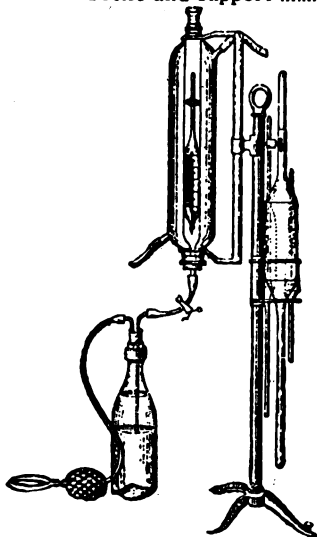
7083



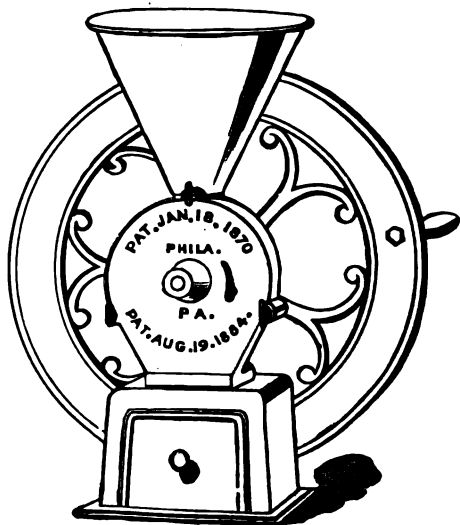
7080

*7080—Milk Testers, Prof. Heeren's color test, very practical.....	90
7081—Ditto, Feser's Lactoscope, see No. 6745.	
7082—Ditto, Caldwell's Lactobutyrometer. Graduated tube with rubber stopper, 2 pipettes and a cylinder; complete.....	3 10
*7083—Ditto, Soxhlet's Milk Testing Apparatus, portable in box con- taining Feser's Lactoscope with pipette, Quevenne's Lactodensimeter, cylinder, thermometer, iodine solution and test paper; complete.....	18 00
*7084—Ditto, according to Short; per dozen \$7.10; each.....	60

*7084/1—Milk Testers, according to Short; complete.....	\$ 23 75
This set includes:	
1 copper water bath, with rack .....	11 00
12 graduated tubes, 2 cc., graduated (No. 7084).....	7 10
12 tubes, plain.....	3 55
2 pipettes, 2 cc., graduated.....	30
1 pipette, 20 cc., graduated.....	40
1 wash bottle, 1 pint.....	95
7086—Ditto, other than the foregoing, see Nos. 4760 to 4762, 6365 to 6369, 6660 to 6662.	
*7087—Ditto, according to Vogel (Vogel's Lactoscope).....	9 00
*7090—Ditto, Soxhlet's Lactobutyrometer, complete with ether wash bottle and support .....	45 00

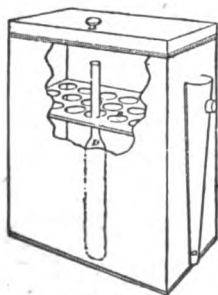


7090



7095

REMEMBER OUR DISCOUNT.



7084/1



7094 No. 2 1/2



7094 No. 2



7087

\*7094—Mills, for grinding drugs, vegetables, etc.

No. 2, iron hopper, 31.5 cm. high.....	5 25
No. 3, iron hopper, 38 cm. high.....	7 50
No. 2 1/2, nickel-plated hopper, 38 cm. high.....	7 50
No. 4, nickel-plated hopper, 52 cm. high.....	13 30
No. 5, iron hopper, 43 cm. high.....	13 30
No. 7, iron hopper, 54.5 cm. high.....	16 65
No. 9, iron hopper, 61 cm. high.....	26 65
No. 10, nickel-plated hopper, 71 cm. high.....	35 00
No. 14, nickel-plated hopper, 107 cm. high.....	45 00
No. 210, nickel-plated hopper, 94 cm. high.....	46 65
No. 12, iron hopper, 81 cm. high.....	36 65
No. 214, nickel-plated hopper, 112 cm. high.....	58 30
No. 212, iron hopper, 109 cm. high.....	50 00
No. 16, iron hopper, 160 cm. high.....	66 65
No. 216, iron hopper, 173 cm. high.....	75 00

\*7095—**Mill, Drug**, (Troemner's Drug Mill). Made for the grinding of roots, herbs, barks, etc.; can be instantly taken apart and thoroughly cleaned. (Illustr. p. 348.)

\$ 25 00  
10 00

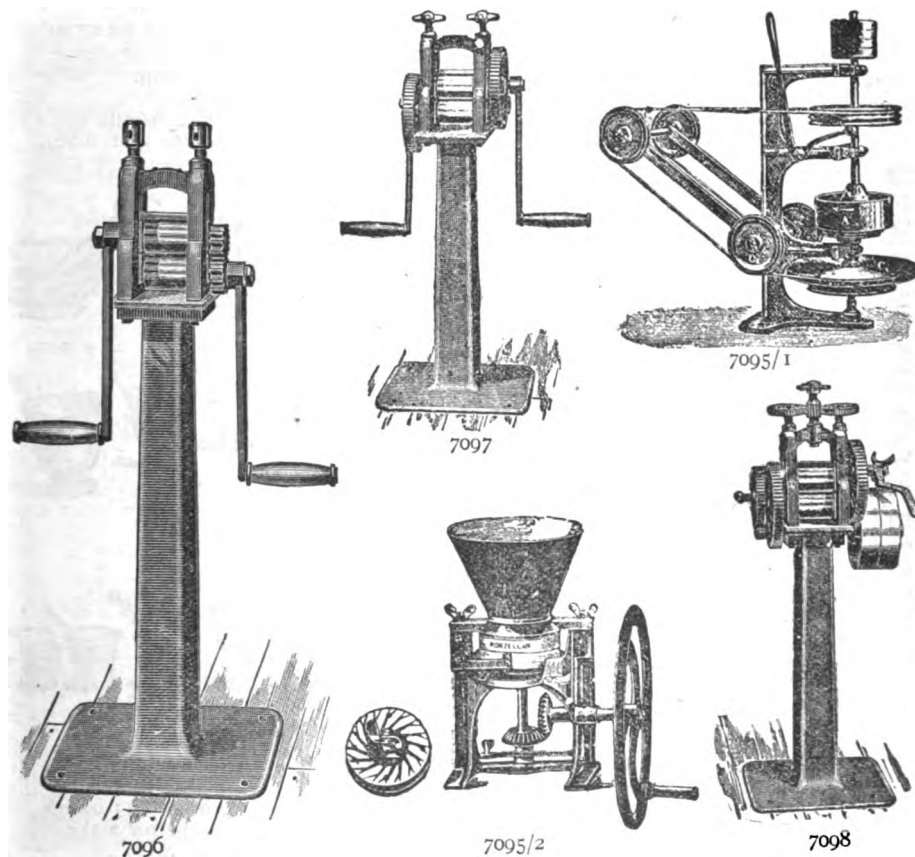
Pulleys for steam power, extra.....

\*I 7095/1—**Mill, Laboratory**, according to Prof. Maerker, for grinding fodders, etc., as used by experiment stations; for hand use; for power,

\$171 00 135 00

\*I 7095/2—**Mill, Laboratory, patented**, with porcelain plates. Especially constructed for grinding substances which should not come in contact with iron. It reduces all substances to the finest powder, not attainable with any other mill.

Grinding surface..... 17 20 25 cm.  
\$45 00 67 50 112 50



APPROXIMATE EQUIVALENTS:  
1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 1800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*7096—**Mills, for rolling lead, silver, etc. Single-gear Hand Mills with flat rolls. Best make.**

No. 1, size of rolls 50x38 mm. diameter, weight 36 kilos .....	50 00
No. 2, size of rolls 63x47 mm. diameter, weight 45 kilos .....	66 50
No. 3, size of rolls 76x57 mm. diameter, weight 65 kilos .....	83 00
No. 4, size of rolls 89x63 mm. diameter, weight 74 kilos .....	100 00
No. 5, size of rolls 101x70 mm. diameter, weight 85 kilos .....	122 50

\*7097—**Ditto, ditto. Double-gear Hand Mills with flat rolls. Best make.**

No. 3, size of rolls 76x57 mm. diameter, weight 80 kilos .....	122 50
No. 4, size of rolls 89x63 mm. diameter, weight 90 kilos .....	140 00
No. 5, size of rolls 101x70 mm. diameter, weight 100 kilos .....	163 00

\*7098—**Ditto, ditto, Triple-gear Power Mills, with flat rolls. Best make.**

No. 6, size of rolls 76 mm. diameter by 114 mm. long, weight 250 kilos	335 00
No. 7, size of rolls 101 mm. diameter by 152 mm. long, weight 450 kilos	650 00

- 7100—**Minerals for blow-pipe experiments.** Collection of 102 specimens in glass cylinders, according to Plattner, in neat paste-board case, with index. **The best set in the market** ..... \$ 15 00  
**Mittens, Asbestos.** See No. 5946.
- 7110, 7120, 7130 and 7140—**Models of Artificial Gems.** See Catalogue of Physical Apparatus.
- 7150/1 to 7160—**Models, Crystallographic, of hardwood, glass and paste-board and composition.** See Catalogue of Physical Apparatus.
- 7170, etc.—**Models of glass, of a steam engine, pumps, etc.** See Catalogue of Physical Apparatus.
- \*7200—**Mortars, Agate, with pestles, best quality.**
- |                   |        |      |      |      |      |       |       |       |         |
|-------------------|--------|------|------|------|------|-------|-------|-------|---------|
| Outside diameter, | 25     | 30   | 35   | 45   | 50   | 60    | 65    | 70    | 75 mm.  |
|                   | \$0 95 | 1 50 | 1 60 | 1 85 | 2 30 | 2 80  | 3 45  | 4 05  | 4 70    |
|                   | 80     | 85   | 90   | 95   | 100  | 115   | 125   | 140   | 150 mm. |
|                   | \$5 00 | 6 25 | 7 50 | 8 10 | 9 40 | 11 90 | 15 00 | 21 85 | 27 90   |
- \*7201—Ditto, ditto, ditto, **extra select, absolutely perfect.**
- |                   |         |       |         |
|-------------------|---------|-------|---------|
| Outside diameter, | 100     | 125   | 145 mm. |
|                   | \$14 10 | 23 00 | 41 65   |
- 7202—**Mortar Mountings, for above, of hardwood, including handle for pestle; for Mortars:** 25 to 50 60 to 75 80 to 100 115 to 150 mm. diam.
- |  |        |      |      |      |
|--|--------|------|------|------|
|  | \$1 50 | 2 00 | 2 75 | 3 50 |
|--|--------|------|------|------|

REMEMBER OUR DISCOUNT.



7240



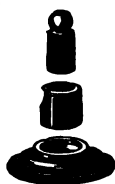
7200 &amp; 7201

7210

7225



7230



7220 &amp; 7221



7235

- \*7210—**Mortars, of brass, with pestle, elegant in shape and finish, Berlin make.** Capacity, 250 cc. 500 cc. 1 lit. 2 lit.
- |  |        |      |      |       |
|--|--------|------|------|-------|
|  | \$4 50 | 6 65 | 9 00 | 13 00 |
|--|--------|------|------|-------|
- \*7220—Ditto, **Diamond, Plattner's, of best English steel and superior make,** regular size .....
- \*7221—Ditto ditto, **large size** .....
- Mortar and Anvil combined, Leed's.** See No. 1280.
- \*7225—Ditto, **of glass, with lip and pestle.**
- |                      |        |        |         |         |         |        |        |
|----------------------|--------|--------|---------|---------|---------|--------|--------|
| Approximate capacity | 30 cc. | 60 cc. | 125 cc. | 250 cc. | 500 cc. | 1 lit. | 2 lit. |
|                      | \$0 25 | 31     | 38      | 50      | 85      | 1 30   | 2 00   |
- \*7230—Ditto, **of iron, with pestle, turned inside, goblet shape.**
- |                       |         |         |        |        |        |          |
|-----------------------|---------|---------|--------|--------|--------|----------|
| Approximate capacity, | 250 cc. | 500 cc. | 1 lit. | 2 lit. | 4 lit. | 7.6 lit. |
|                       | \$0 40  | 55      | 70     | 1 10   | 2 15   | 2 95     |
- \*7235—Ditto, ditto, heavier, **bell shape.**
- |                   |         |         |    |      |      |      |      |           |
|-------------------|---------|---------|----|------|------|------|------|-----------|
| Approx. capacity, | 250 cc. | 500 cc. | 1  | 2    | 4    | 7.6  | 11.4 | 15.2 lit. |
|                   | \$0 43  | 56      | 85 | 1 45 | 2 15 | 3 80 | 6 50 | 8 00      |
- 7236—Ditto, ditto, ditto, **chilled, equal to steel, especially made for powdering hard ores, such as Spiegel, etc.**
- |  |        |      |           |
|--|--------|------|-----------|
|  | 4      | 7.6  | 11.4 lit. |
|  | \$5 00 | 7 50 | 10 80     |
- \*7240—**Mortars, of iron, with pestle, bell shape, with 2 arms, very heavy.**
- |  |       |
|--|-------|
| 4 lit.; weight with pestle, 20 kilos; dimensions, 23x19 cm ..... | 8 50  |
| 8 lit.; weight with pestle, 43 kilos; dimensions, 29x21 cm ..... | 14 50 |



**\*7241—Mortars, of iron, for grinding and amalgamating, Buck's.**

Diameter	15 cm	20 cm.
	\$9 50	13 00

**\*7245—Ditto, ditto, with pestle, finely turned and polished inside and outside.**

	8	9	10	11	12	15.5 cm. diam.
	\$2 50	3 00	3 30	3 50	4 35	6 00

Mortar, being a Crusher and Pulverizer combined, see No. 4695.

**\*7250—Mortars, of Berlin porcelain, with pestle and lip, shallow form, rough inside, glazed outside.**

No.....	00	0	1	2	3	4	
Diameter.....	6 cm.	7 cm.	8.5 cm.	10 cm.	11.5 cm.	13 cm.	
	\$0 35	44	50	62	75	95	
No.....	5	6	7	8	9	10	11
Diameter.....	15	16.5	18.5	20	21.5	23.5	25 cm.
	\$1 25	1 35	1 65	1 85	2 00	2 50	3 25
No.....		12	13	14	15	16	
Diameter.....		26.5 cm.	29 cm.	31 cm.	34 cm.	37 cm.	
		\$3 40	4 75	6 40	7 80	10 00	

**\*7255—Mortars, of Berlin porcelain, with pestle and lip, deep form, rough inside, glazed outside.**

No.	0	1	2	3	4	5	6	7	8
Diameter	8	9	11	13	15	17.5	20	23.5	26 cm.
	\$0 45	55	80	1 05	1 25	1 75	2 00	3 25	4 50

Nos. 7250 and 7255 with any desired name burned in on mortar and pestle imported to order, at an additional cost of \$1.00 for each mortar.

**\*7260—Ditto, ditto, bell shape, with two knob handles and pestle.**

No.		1	2	3
Diameter		12	15	18 cm.
Height		12.5	14	16 cm.
		\$2 50	3 00	3 75



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*7265—Mortars, Wedgewood, with lip and pestle, first quality only.**

No.	0000	000	00	0	1	2	3	4
Diameter	7.3	8.2	9.8	12	12.7	14	15.9	17.8 cm.
Each	\$0 50	60	67	75	83	1 00	1 30	1 55
Dozen	5 40	6 50	7 20	8 10	9 00	11 00	14 40	16 80
No.	5	6	7	8	9	10	11	12
Diameter	19	21	22.8	25.4	28	30.5	33	35.5 cm.
Each	\$1 90	2 35	3 00	3 75	4 60	5 55	6 50	7 50

**\*I 7267—Motor, Hot Air; can be heated by gas, kerosene or alcohol.**

Diameter of piston	30	54	65	80	100	150 mm.
Power	1/60	1/40	1/20	1/15	1/10	1/5 H. P.
Each	\$35 00	60 00	100 00	150 00	200 00	400 00

If imported duty free

	24 50	42 00	70 00	105 00	140 00	280 00
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**\*7268/1—Motor, Hydraulic, for running stirrers, blowers, crushers, etc.**

(Illustr. p. 352.)

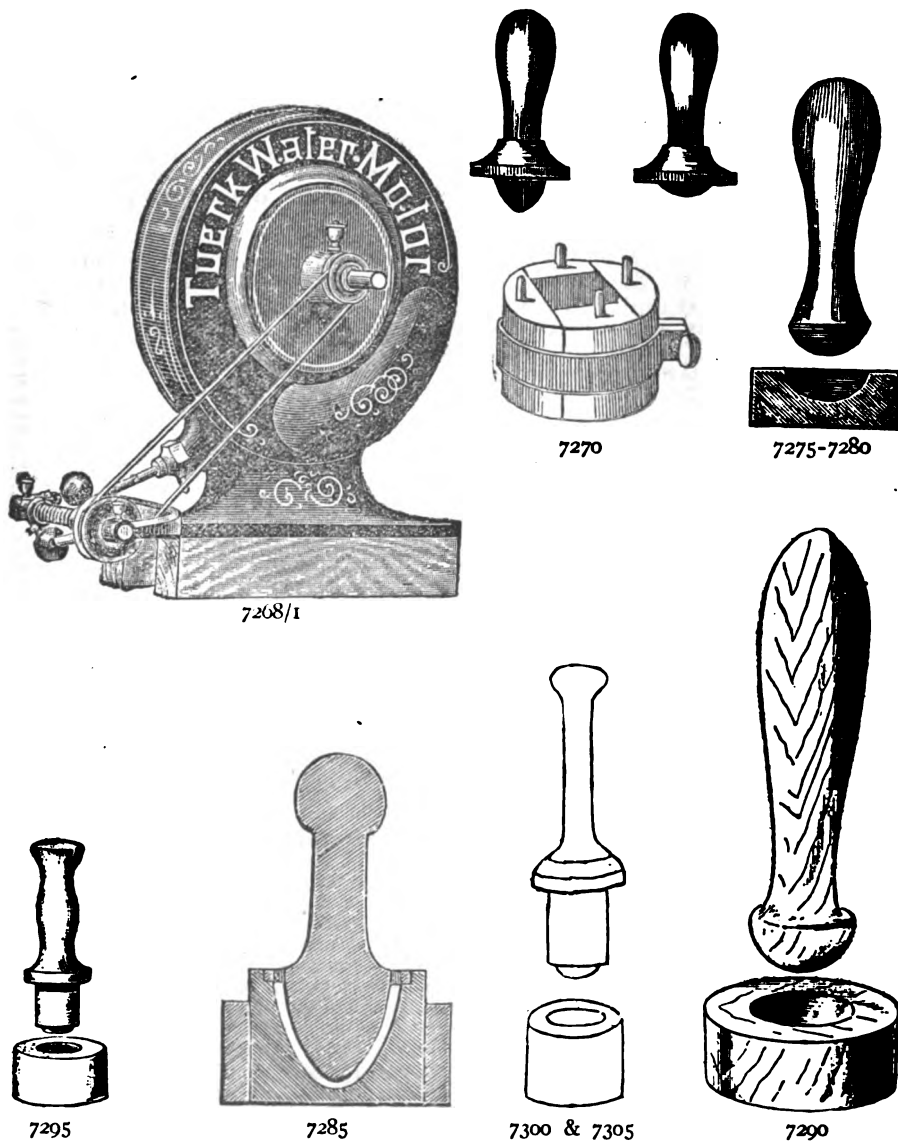
No.	8	from 1 S. M. to ¼ H. P.	according to pressure of water	\$ 25 00
No.	9	from ¼ H. P. to 1 H. P.	" " " "	50 00
No.	10	from ¼ H. P. to 2 H. P.	" " " "	83 25
No.	10½	from ½ H. P. to 4 H. P.	" " " "	125 00
No.	11	from 1 H. P. to 6 H. P.	" " " "	166 50
No.	12	from 2 H. P. to 12 H. P.	" " " "	291 50
No.	13	from 3 H. P. to 20 H. P.	" " " "	475 00
No.	15	from 5 H. P. to 32 H. P.	" " " "	583 00

- \*7270—Mould, for square coal and cover, with two stamps..... \$ 5 60  
 \*7275—Ditto, for Clay Capsules, with stamp; of boxwood..... 85  
 \*7276—Ditto, for Clay Capsules, with stamp; of hardwood..... 62  
 \*7280—Ditto, for Coal Capsules, with stamp; of boxwood..... 1 00  
 \*7285—Ditto, for Clay Crucibles; of brass, nicely finished..... 5 35  
 \*7290—Ditto, for Coal Crucibles, with stamp; of hardwood..... 62

\*7295—Ditto, for Cupels, of steel, improved pattern.

Diameter	25	32	38	45	51 mm.
	\$1 65	1 90	2 05	2 50	2 80

REMEMBER OUR DISCOUNT.



\*7300—Moulds, for Cupels, of brass.

Diameter	25	28.5	32	38	45	51 mm.
	\$2 65	3 00	3 10	3 40	3 75	4 65

\*7305—Ditto, ditto, of brass, according to our own pattern, with heavy shoulder and long handle, ring 50 mm. high; the strongest, best and most practical cupel mould ever made. 32 38 mm.  
 Entire length of piston..... 19 20 cm.

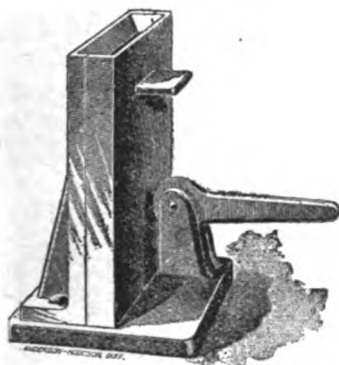
\$4 25 4 75

**\*7310—Moulds, Ingot, of iron, plain, open.**

No. ....	0	1	2	3	4
Length.....	76	101	152	180	184 mm.
Width.....	13	14	22	28	41 mm.
Depth.....	14	9	11	19	25 mm.
	\$0 75	90	1 05	1 55	1 90
No. ....		5	6	7	8
Length.....		225	235	257	292 mm.
Width.....		54	82	95	101 mm.
Depth.....		28	51	63	79 mm.
		\$2 25	2 90	4 00	4 50

**\*7311—Ditto, ditto, of iron.**

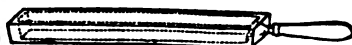
Length.	Width.	Depth of Ingot.		
40 mm.	20 mm.	25 mm.	Each.....	\$ 0 50
52 mm.	26 mm.	32 mm.	Each.....	60
102 mm.	55 mm.	47 mm.	Each.....	94



7316



7311



7310



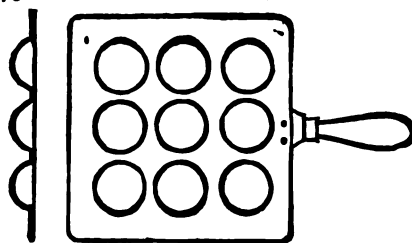
7320



7320A



7325



7330

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*7316—Ditto, ditto, upright sliding.** These ingot moulds are milled perfectly smooth, and are well finished. The eccentric lever is made of malleable iron.

No. 1—76 mm. high, 69 mm. wide, and 3.2 and 4.7 mm. thick.....	3 75
No. 2—114 mm. high, 69 mm. wide, and 3.2, 4.7 and 6.3 mm. thick....	4 75
No. 3—152 mm. high, 69 mm. wide, and 3.2, 4.7 and 6.3 mm. thick....	5 75

**\*7320—Ditto, ditto, Fletcher's No. 8, to obtain in a few minutes ingots of silver, gold, etc., without the use of a furnace.**

Melting arrangement, with both wire and plate moulds.....	5 15
Wire moulds.....	1 98
Plate moulds.....	1 98
Extra carbon crucibles, without slides, for No. 8 or No. 8D, doz.....	1 60
Extra carbon crucibles, with slides, for No. 8 or No. 8D, doz. ....	2 75

Blow-pipe No. 8A, especially designed for use with above ingot mould. The air jet is 3 mm. bore, and requires a supply from a foot-blower (see fig. 7320A)..... 3 55

**\*7325—Ditto, ditto, Fletcher's New No. 8D.**

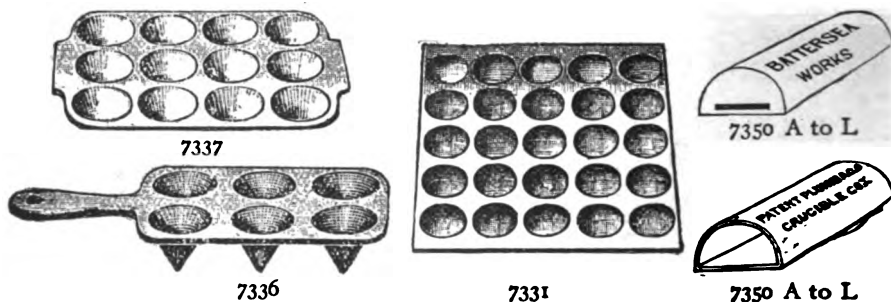
Melting arrangement, with Ingot Mould.....	4 75
Ingot Mould, if ordered separately.....	1 98
Extra Carbon Crucibles, without slides, for No. 8D; per dozen.....	1 60
Extra Carbon Crucibles, with slides, for No. 8D; per dozen.....	2 75

**\*7330—Mould, Scorification, of iron, with 9 round cavities.**

1 00

- \*7331—**Mould, Scorification**, of iron, with 25 round cavities..... \$ 1 25  
 \*7335—Ditto, ditto, of iron, with 3 conical cavities and wooden handle. (Illustr. p. 355.) 80  
 \*7336—Ditto, ditto, of iron, with 6 conical cavities..... 75  
 \*7337—Ditto, ditto, with 12 conical cavities..... 94  
 \*7338—Ditto, ditto, with 6 conical cavities; made of heavy solid iron, so that the slag will cool rapidly; cavities 57 mm. in diameter, 41 mm. deep, with solid iron handle... (Illustr. p. 355.)..... 2 50  
 \*7340—Ditto, ditto, California pattern, for double assay. (Illustr. p. 355.)..... 1 00  
 7345—Ditto, ditto, of copper, with 9 cavities, fig. 7330..... 6 75  
 7347—**Mouth-pieces for Blow-pipes**, trumpet-shaped, of hard rubber, see figs. 3105, 3110 and 3111; each..... 33  
 7348—Ditto, cylindrical; see figs. 3105, 3110 and 3111, each..... 31  
 \*7349—Ditto, of heavy glass, for inhaling **laughing gas** and so-called "compound oxygen." (Illustr. p. 355); per dozen, \$3 75; each..... 35  
 7349/1—**Muffles of platinum**, according to Scheibler, for incinerations, etc.; width, 51 mm.; height, 38 mm.; length, 114 mm.; approximate weight, 51 grammes (platinum support for same, about 6 grm.) At lowest market price.

REMEMBER OUR DISCOUNT.



**\*\*7350—Muffles, Battersea.** They are far superior to any other muffles. (One Illustr. p. 355.)

No.	Length mm.	Width mm.	Height mm.	Length Inches.	Width Inches.	Height Inches.	Number in Original Cask	Price in Original Casks per doz.	Price per doz.	Price each
A	178	90	64	7	3½	2½	280	\$ 5 60	\$ 6 33	\$0 59
B	190	111	73	7½	4½	2½	160	7 20	8 10	75
C	203	121	76	8	4¾	3	130	8 80	9 90	92
D	216	127	83	8½	5	3¾	130	10 40	11 70	1 08
E	229	140	92	9	5½	3¾	100	11 20	12 60	1 17
F	254	153	102	10	6	4	50	12 80	14 40	1 33
G	280	102	80	11	4	3¾	25	9 60	10 80	1 00
H	267	134	99	10½	5¼	3¾	75	10 40	11 70	1 08
J	305	153	102	12	6	4	50	12 80	14 40	1 33
K	356	203	127	14	8	5	25	19 20	21 60	2 00
L	382	229	153	15	9	6	25	20 80	23 40	2 17
C elongated	254	121	76	10	4¾	3	100	10 40	11 70	1 08
C for Hoskins' Furnace.	203	121	76	8	4¾	3	130	8 80	9 90	92
F for Hoskins' Furnace.	254	153	102	10	6	4	50	12 80	14 40	1 33
KK	356	203	127	14	8	5	15	19 20	21 60	2 00
LL	382	229	153	15	9	6	25	20 80	23 40	2 17
NN	406	254	165	16	10	6½	18	32 00	36 00	3 33
OO	406	279	197	16	11	7¾	12	32 00	36 00	3 33
PP	457	279	197	18	11	7¾	12	36 00	32 00	3 75
RR	457	305	197	18	12	7¾	15	36 80	41 40	3 83
SS	483	305	197	19	12	7¾	15	36 80	41 40	3 83
TT	382	330	178	15	13	7	15	36 80	41 40	3 83
VV	457	254	165	18	10	6½	20	36 00	40 50	3 75
WW	457	356	178	18	14	7	13	48 80	54 90	5 08
YY	482	267	165	19	10½	6½	20	35 60	39 55	3 66
ZZ	508	305	197	20	12	7¾	13	51 70	57 45	5 32

Casks for No. 7350 charged extra.

**\*7355—Muffles, Boulter's.** These muffles are made of the best material.

Length.	Width.	Height.	
381 mm.	229 mm.	152 mm.	\$ 3 25
356 mm.	203 mm.	127 mm.	2 70
305 mm.	152 mm.	102 mm.	1 90
273 mm.	133 mm.	98 mm. (Mint size)	1 50
280 mm.	114 mm.	76 mm.	1 45
203 mm.	83 mm.	57 mm.	1 10
178 mm.	90 mm.	64 mm.	1 00

**Casks charged extra. Any size or style of Boulter Muffles furnished to order.**

**\*7360—Muffles, of French Clay (Beaufay).**

No.	1	2	3	4	5	6	7	8
Length	100	120	140	150	190	200	220	230 mm.
Width	70	85	95	105	125	135	135	140 mm.
Height	50	70	80	90	100	100	105	105 mm.
	\$0 50	55	75	85	1 00	1 25	1 50	2 00

**7375—Ditto, for Hoskins' furnace. See No. 7350.**



7338



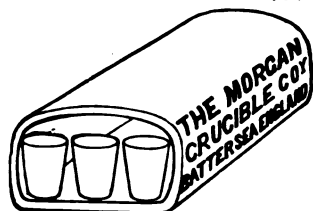
7355



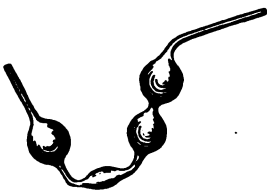
7340



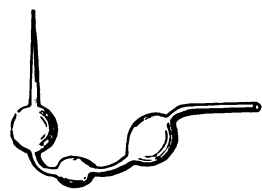
7335



7350 KK to ZZ



7405



7400



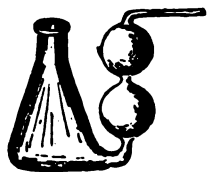
7349



7360



7395



7410

**7380—Muffles, of Black-lead, for Fletcher's Muffle Furnace.**

No. 3—76x102x63 mm. inside measure	2 04
No. 4—98x127x76 mm. inside measure	2 55
No. 5—114x178x95 mm. inside measure	3 06
No. 6—133x203x108 mm. inside measure	5 10

**7381—Ditto, of Clay, for Fletcher's Muffle Furnace, No. 5**

2 40

**7385—Muffle Domes, of Black-lead, for Fletcher's Muffle Furnace.**

No.	3	4	5	6
	\$2 04	2 55	3 06	5 10
		50	75	100 mm.
		\$0 50	85	1 25

**\*7395—Mullers, of glass, heavy.**

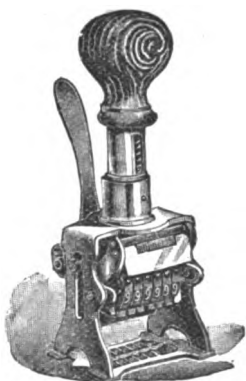
**Nippers, Button; see Pliers.**

<b>*7400—Nitrogen Bulb, Will &amp; Varrentrap's, with 3 bulbs.</b>	44
<b>*7405—Ditto, Arndt &amp; Knopp's, with 4 bulbs.</b>	44
<b>*7410—Ditto, Will &amp; Varrentrap's, improved by Fresenius, for filtrations.</b>	62

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*7411—Nitrogen Bulb, French form .....	\$ 0 43
*7412—Ditto, Vollhardt's.....	62
*7413—Ditto, Vollhardt's.....	62
*7414—Ditto, Trollin's.....	75
7417—Normal Instruments, such as Thermometers, Hydrometers, Cylinders, Flasks, Burettes, Pipettes, etc., furnished to order. Numbers of Steel, for marking bullion. See No. 4870.	
*7418/10—Numbering Machine. The best and lowest priced numbering-machine in the world. Steel composition figures. No Rubber used in the construction. Numbers from "One" to "One Million." Consecutive numbering, duplicating, triplicating and repeating can be done at will. Very serviceable in numbering ore-bags, order-sheets, etc. Each .....	8 30
7418/15—Nutschen Cups. Schleicher & Schuell's No. 599, made of the same material as Extraction Thimbles No. 5067/12. They fit Buechner's Porcelain Funnels.	
95 mm. diameter.	150 mm. diameter.
30 mm. high.	30 mm. high.
Per box of 24 cups, \$13 40	19 65

REMEMBER OUR DISCOUNT.



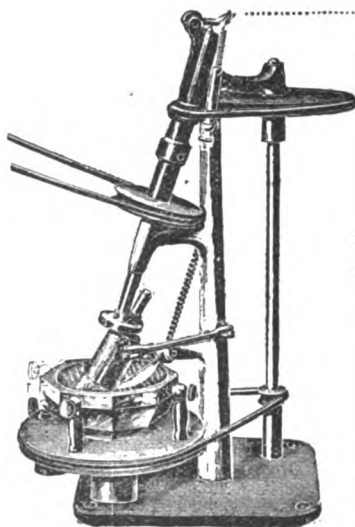
7418/10

123456

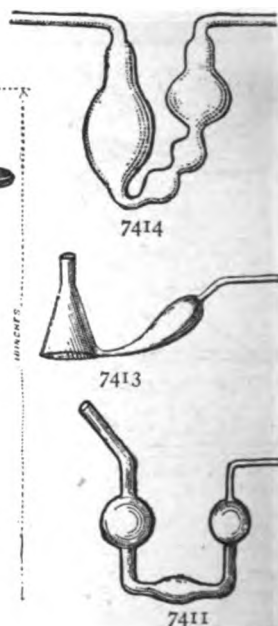
7418/10



7412



7418/50



\*7418/50—Ore Grinder. McKenna Laboratory Ore Grinder, for use with Agate Mortar and Pestle.

The McKenna Grinder which we illustrate, reproduces almost exactly the motion used in hand grinding. The spring at the top of the sliding rod, to which the agate Pestle is adjusted at the bottom, can be adjusted to give any desired pressure, or can be thrown back entirely to allow the pestle to be raised in removing the agate mortar. The mortar is readily removed by loosening a set screw and dropping one of the four posts holding the mortar in place. A scraper keeps the ore in the center of the mortar, and the combined rolling and sliding motion of the pestle, which is controlled by a ball and socket side arm, reduces the hardest ore very rapidly, with no attention required from the operator. The Grinder may be operated by any convenient power, of which not to exceed one-eighth horse power is required. The mortar used has a diameter of about 110 mm.

Testimonials from chemists will be furnished on application.

Price of Grinder complete with Agate Mortar and Pestle.....

Price of Grinder without Agate Mortar and Pestle.....

100 00

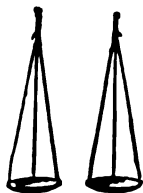
83 25

We recommend that the outfit be purchased complete in which case the mortar and pestle are accurately fitted and adjusted.

*7420—Ozonometer, Sieman's form, unmounted.....	\$ 4 00
*7421—Ditto, ditto, handsomely mounted.....	0 00
*7422—Ozonometer Tube only, of glass, for making Ozonometers.....	1 55
<b>Pails, for laboratory use. See Nos. 3635 and 3636.</b>	
*7427—Pans, of Aluminium, for Assay Balances, 19 mm. diameter, accurately checked. Per pair.....	1 65
<b>7428—Pans, Glass, with handles, for Scales.</b>	
Diameter 7 5 cm. 10 cm. 12.7	
Per pair \$0 75 1 00 1 20	
7429—Pans for scales, of brass and of brass nickel-plated, furnished to order at lowest prices.	
*7430—Pans, Horn, for hand scales; with silk cord.	
Diameter 4 5 6.5 7.5 10 12 cm.	
Per pair \$0 40 45 63 75 1 25 1 88	
7440—Paper, heavy white bibulous, per kilo.....	60
7445—Ditto, Wrapping, white, per kilo.....	33
7450—Ditto, Manilla, heavy, per kilo.....	33
7455—Ditto, Manilla, medium, per kilo.....	33
7460—Ditto, glazed, assorted colors, quire.....	50
7465—Ditto, glazed, heavy black, quire.....	50
7467—Paper for absorbing milk, called No. 571, according to M. A. Adams, absolutely free from fat, recommended by Prof. Soxhlet. In strips 65x560 mm.; 100 in a paste-board box. Price per box.....	4 33



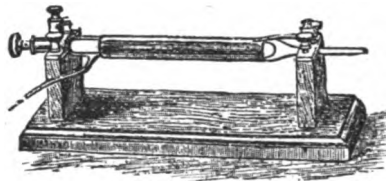
7427



7430



7420 &amp; 7422



7421

7470—Paper, Parchment, light and medium, per kilo.....	1 20
7475—Ditto, Acetate of Lead; quire \$1 25; sheet.....	06
7480—Ditto, Brazilwood; quire \$1 25; sheet.....	06
7481—Ditto, Congo, quire, \$1 25; sheet.....	06
7482—Ditto, Fernambuc; quire \$1 25; sheet.....	06
7485—Ditto, Iodide of Potassium; quire \$1 25; sheet.....	06
7486—Ditto, Iodide of Starch; quire \$1 25; sheet.....	06
7490—Ditto, Litmus, red and blue; (See also No. 7505/10); quire, \$0 94; sheet.....	05
7495—Ditto, Logwood; quire \$1 25; sheet.....	06
7496—Ditto, Guaiac; quire, \$1 25; sheet.....	06
7500—Ditto, Soda, for blow-pipe analysis; quire \$1 25; sheet.....	06
7505—Ditto, Turmeric; quire, \$0 94; sheet.....	06
7505/10—PAPER, LITMUS, red and blue, IN SMALL BOOKS CONTAINING 36 SHEETS EACH. The most practical shape.	
Per book. Per box containing 12 books, Per dozen boxes. (= 144 books.) Per gross boxes. (= 1728 books.)	
\$0 06 .60 6 00 60 00	

7506—Paper, Tissue Manilla, 28x38 cm.; ream.....	55
7507—Paper Bags, best Manilla, satchel bottom, in packages of 500 each.	

Per 1000	\$1 26	1 51	2 02	2 16	2 62	3 16	3 67	5 04
	8	10	16	20	25	30	35	50
Per 1000	\$6 05	6 55	11 34	12 60	13 86	16 38	18 90	

7508/1—Paper Bags, for ore samples, extra heavy tough Manilla, with Weaver patent metal clasps. The best ore sample bags made.	
--	--

Capacity 30 60 120 180 240 350 475 570 685 cc.	
112x76 133x89 150x100 175x113 200x127 250x150 300x175 350x200 380x240 mm.	
Per 100 \$1 20 1 45 1 65 1 90 2 20 2 75 3 50 4 30 5 20	
Per 1000 11 00 13 00 15 00 17 00 20 00 25 00 32 00 39 00 47 00	

**Paper cups. See Nutschen Cups No. 7418/15.**

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*7509/5—**Paraffine Bath**, for microscopic work, of polished copper, 17.7 cm. long, 9.5 cm. wide and 8.9 cm. deep. It is provided with a space for heating slides, two nickel-plated cups 63 mm. diameter and 41 mm. deep, also tubulations for thermometer and gas regulator.

With and without sheet iron base;

\$9 35 8 45

\*7509/6—Ditto, of polished copper, 20 cm. long, 10 cm. wide and 10 cm. deep. The bath has two nickel-plated cups, one shallow and one deep. With two drawers for slides, tubulations for thermometer and gas regulator and sheet iron base.

\$ 15 00

7509/7—Ditto, large, round Bath, of polished copper, 32 cm. diameter, 8.9 cm. deep, with sheet iron base, 19 cm. high. There are ten cups, seven being of deep form, 57 mm. diameter and 41 mm. deep, and three shallow, 57 mm. diameter, 19 mm. deep, also five tubulations in the top for glass tubes, and two for thermometer and gas regulator.

**Paraffine Bath alone.**

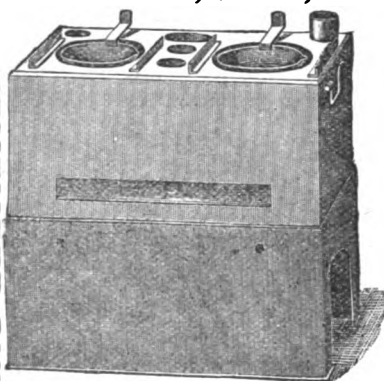
23 65

**Paraffine Bath with Gas Regulator, Thermometer and Burner.**

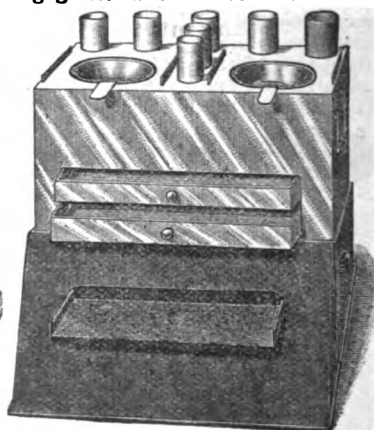
28 15

**Pencils, Carbon**, for cutting glass. See Charcoal Sticks No. 4060.

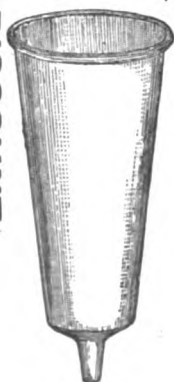
REMEMBER OUR DISCOUNT.



7509/5



7509/6



7510



7511



7530

**Pasteur Dishes.** See No. 2988 and 2988/1.

7509/10—**Pencils, Litmus**, red and blue combined; each..... 40

7509/12—**Pencils**, black, for writing on glass; each, \$0 16; per doz..... 1 60

7509/13—**Pencils**, blue, for writing on glass, Faber's; each, \$0 21; per doz..... 2 10

\*7510—**Percolators**, of heavy flint glass, with ground top, best form, conical.

Approximate Capacity	475	950 cc.	1.9	3.8	7.6	11.4	19 Liters.
	\$0 40	45	70	1 00	2 00	3 00	6 25

\*7511—**Percolators, of flint glass, narrow**, as used by the Chicago College of Pharmacy.

Approx. Capacity	475	950 cc.	1.9	3.8	7.6	11.4 Liters.
Each	\$0 50	75	1 05	1 55	2 30	4 10

7520—Ditto, of tin, with diaphragm and cover, conical form, see fig. 7510.

Approximate capacity	475	950 cc.	1.9	3.8	7.6 Liters.
	\$0 75	1 05	1 50	2 00	3 00

Ditto, of copper; furnished to order at lowest prices.

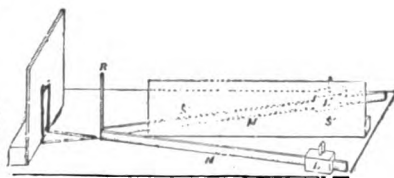
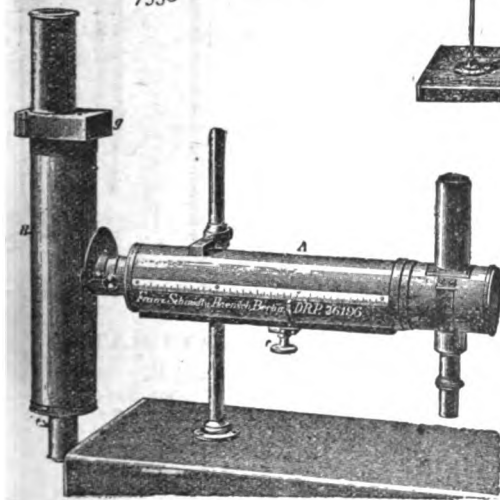
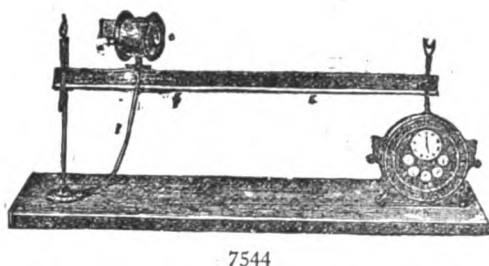
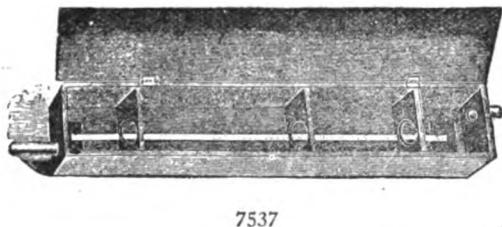
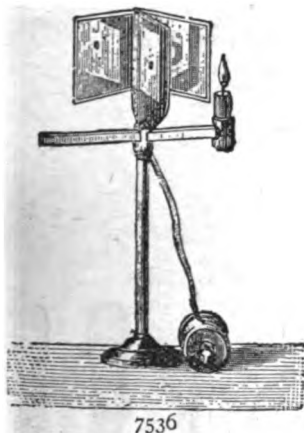


**\*7530—Percolators, N. Rosenwasser & Co.'s patent. (Illustr. p. 358.)**

Capacity	240	480	1400	2400	Grammes.
	\$3 50	4 50	6 00	7 50	

**Percolating Jars.** See No. 6655, etc.**Petri Dishes.** See No. 2987.

<b>*7535—Photometer, Rumford's</b> , of pine, well shellacked, with scales and screens.....	\$ 5 70
<b>*7536—Photometer, according to Bunsen</b> , for measuring the length of light rays.....	13 35
<b>*7537—Photometer, according to Bunsen</b> , with hoods, scale screen, all enclosed for use in a light room. Made of well finished wood.....	9 35
<b>I 7538—Photometer, according to Brodhun</b> .....	530 00
Portable Accumulator, extra.....	35 75
Resistance Box, extra.....	19 50



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

<b>*I 7544—Photometer, Bunsen's</b> , simple form.....	140 00
<b>I 7545—Photometer, Bunsen's</b> , of improved construction, consisting of: Gasometer, micrometer, gas pillar, candle-pillar, measured bar, mahogany sliding box, candle balance, normal candles, pressure gauge, Argand burner, bar holder, chimneys. As used in Gas Works, complete	325 00
<b>I 7546—Ditto</b> , ditto, without micrometer pillar and candle balance.....	245 00
<b>*I 7547—Photometer, according to Prof. Weber, Zuerich. Results more accurate than with any other instrument.</b> Packed complete in case.....	240 00
Imported duty free for colleges, etc., at.....	175 00

- \*7550—**Pill Machines**, iron, oak-wood frame, **reversible**, for 2 and 3 grain pills..... \$ 7 50  
 \*7551—Ditto, ditto, **reversible**, for 3 and 4 grain pills..... 7 50  
 \*7560—**Pill Roller**, of polished wood, fine finish..... 33  
 \*7561—**Pill Silverer**..... 75  
 \*7570—**Pill Tiles**, of porcelain, graduated.

Approximate dimensions 13x13 15x15 18x18 20x20 25x25 30x30 15x20 20x25 cm.  
 \$0 56 70 95 1 05 1 70 2 80 1 05 1 70

**Pinch-cocks.** See Clamps No. 4140, etc.

7580—**Pipe Stems**, of clay, doz..... 30

7589—**Pipe**, of lead, from 6 to 25 mm. in diameter (special price in quantity); per kilo..... 55

7590—**Pipe**, of pure block-tin, from 6 to 25 mm. diameter; per kilo..... 1 90

\*7600—**Pipettes**, straight, not graduated.

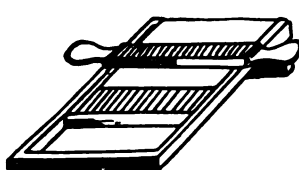
Each, 13 15 18 21 25 31 38 50 cm.  
 \$0 05 06 07 08 09 10 12 15

\*7605—Ditto, small, with rubber bulb, **straight or bent**, each \$0.07; per doz..... 50

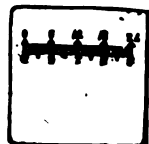
\*7610—Ditto, with globular or pear-shaped bulb, not graduated.

Capacity about 5 15 25 50 100 200 cc.  
 Each \$0 12 20 25 30 35 62

REMEMBER OUR DISCOUNT.



7550 & 7551



7570



7561



7560



7625



7615A



7615B



7610



7600



7605

### PIPETTES, GRADUATED, ABSOLUTELY ACCURATE.

\*7615—**Pipettes, Volume**, with one graduation mark, fig. A and B.

1 2 3 5 10 15 20 25 50 75 100 200 cc.  
 \$0 12 1/2 15 19 25 30 37 50 62 63 87

7615/1—**Pipettes, Volume**, with one graduation mark at 29.16666 cc., so-called **Assay-Pipettes**, same shape as No. 7615 A; each..... 60

7620—Ditto, ditto, fig. 7615. 1 2 drams.

\$0 25 30 35

7621—Ditto, **graduated in minims**, fig. 7625.

30 60 minims.

\$0 31

44

\*7625—Ditto, **graduated, Mohr's**.

	1	2	5	5	10	10	10	20 cc.
Divided into	100	50	20	10	5	2	1	1/2
	\$ 50	55	50	02	05	09	75	80
	20	25	25	50	50	50	100	100 cc.
Divided into	10	5	2	1	1/2	1/3	1/4	1/5
	\$0 87	87	1 00	1 10	1 25	1 55	1 75	2 50

Rubber Bulbs for same, each.....

\*7626—**Pipettes, graduated, with glass stop-cock**.....

Divided into

10	25	50	100 cc.
$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
\$1 85	2 20	2 50	3 10

\*7627—**Ditto, graduated, according to Crampton, for measuring fresh sugar juice for polarization, graduated 5 to 25°**.....

\$ 1 85

\*7627/1—**Ditto, ditto, for glucose**.....

1 85

\*7628—**Ditto, Volume Safety, with reservoir to receive the surplus of liquid sucked up. For acids and similar liquids.**.....

2 to 5 cc.

10 to 25 cc.

50 cc.

100 cc.

Each, \$3 00

3 75

4 10

4 85

\*7629—**Pipette for drawing acids from carboys, according to Prof. J. C. Foye, about 75 cm. long**.....

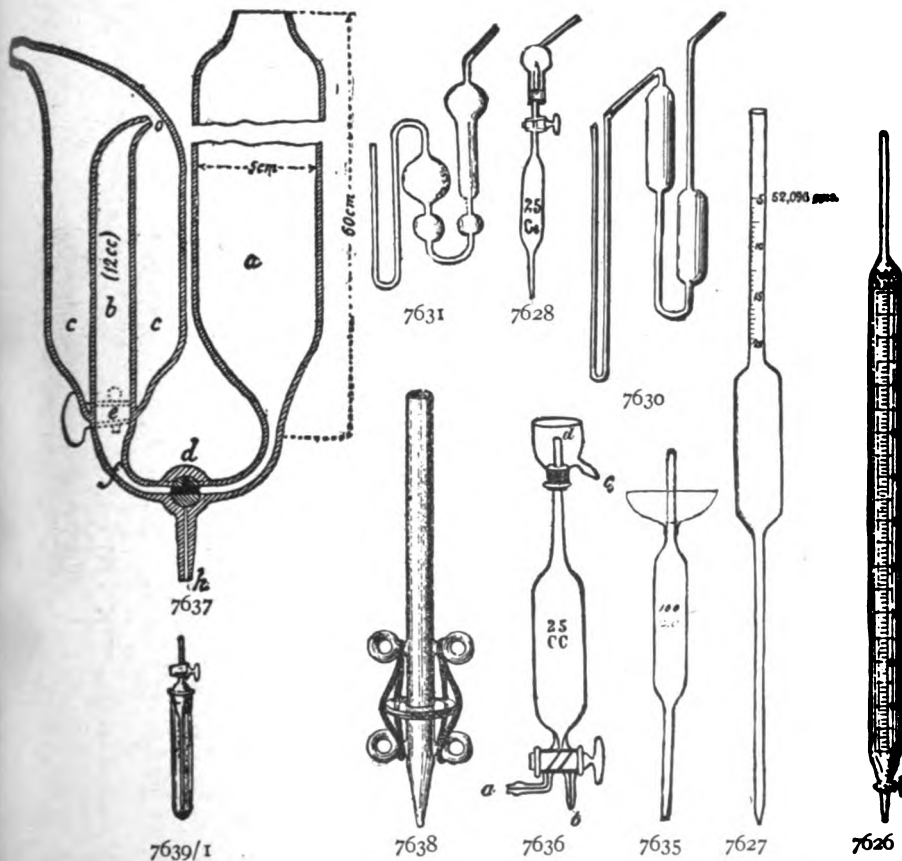
2 50

\*7630—**Ditto, Ether, Ettling's, large**.....

1 00

\*7631—**Ditto, ditto, Doyere's**.....

1 05



\*7635—**Pipettes, Overflow, Ricketts' for silver assay, with cup, 100 cc.; with ground cup, \$2 50; plain**.....

1 65

\*7636—**Ditto, Overflow (Fresenius, 1888, vol. 470), with three-way stop-cock.**.....

17.6

25

50

100 cc.

\$2 50

3 10

3 40

3 75

\*7637—**Ditto, Overflow, according to G. P. Vanier**.....

8 00

\*7638—**Pipette, for micro-chemical filtration**.....

94

\*7639—**Pipette, Rothe's, for rapid estimation of iron, as perchloride, by means of ether.**.....

15 00

With support. (Illustr. p. 362.)

18 75

\*7639/1—**Pipette, Grethan's, for weighing fuming acids, etc.**.....

3 35

\*7639/2—**Pipette**, Lunge's, for weighing fuming acids, etc. \$ 6 00

\*\*7639/3—Ditto, Schweizer's, for weighing light and heavy liquids.

	10	25	50 cc.
\$	45	60	75

\*7640—**Pipette Bottle**, with a capped pipette ground into the neck in place of stopper, very practical, especially for volatile liquids. The last drop of liquid can be taken out. With 10 25 50 100 cc. pipette.

\$3 00	3 75	4 50	5 25
--------	------	------	------

7641—**Pitchers for Acid**, of stoneware.

Approximate capacity	500 cc.	1	2	4	6 lit.
Each	\$0 30	40	65	95	1 35

7650—**Pith Balls**. See Catalogue of Physical Apparatus.

7655—**Plates of Carbon, for Batteries, best make.**

Length	28	28	28	25	25	25	23	20	20 cm.
Width	15	15	15	15	15	15	15	15	15 cm.
Thickness	9	6	4.5	9	6	4.5	6	9	4.5 mm.
Each	\$0 75	62	50	62	50	45	50	60	40

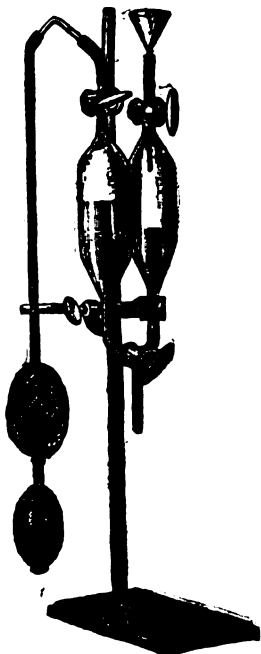
**Carbon Plates of any size made to order in quantity.**

7660—**Plates, Enameling, of French clay, for jewelers, round.**

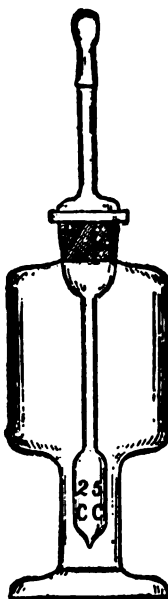
Diameter	11.5 cm.	15 cm.
	\$0 30	40

7661—Ditto, ditto, square. 12.5 x 12.5 cm. 12.5 x 19 cm. 14 x 20 cm.  
\$0 30 40 60

REMEMBER OUR DISCOUNT.



7639



7640



7639/3



7639/3



7639/2

7680—**Plates, of colored glass; blue, green, violet and ruby.**

Blue or	Each.....	\$0 5	7.5	10	12.5	15 cm. sq.	2.5x6.25 cm.
Green	Per doz.	80	1 20	1 15	2 20	3 30	07
Violet or	Each....	10	14	20	27	40	09
Ruby	Per doz.	1 10	1 65	2 40	3 20	4 80	1 00

**Any sizes cut to order!**

7690—Ditto, of glass, ground on one side, ordinary thickness.

7.5	10	12.5	15	18	20	23	25	30	38 cm. square.
\$0 06	7½	10	12	15	20	25	35	45	60

7695—Ditto, of heavy French plate glass, ground on one side.

7.5	10	12.5	15	18	20	25	30	38	50 cm. square.
\$0 22	25	31	37	45	50	1 00	1 25	2 00	3 10

7700—Plates, of porcelain. 10 13 16 21 25 30 cm. square.

\$0 42 70 1 05 1 40 1 75 2 10

\*7705—Ditto, of Berlin porcelain, with 4 grooves, for stirring rods, pipettes, etc.

\$ 0 80

\*7710—Ditto, of Berlin porcelain, with 12 cavities for color reactions in organic analysis, 85 x 115 mm.

75

\*7715—Ditto, of Berlin porcelain, unglazed (Arsenic Test Plates).

4 x 7.5 5.5 x 9 7.5 x 10 9.5 x 14 cm.

\$0 25

30

30

35

\*7720—Ditto, of Berlin porcelain, unglazed (Streak Plates), 7.5x10 cm. See also No. 7715

30

7721—Plates, of porous clay, for drying crystals, etc.

Saucer.

Dinner Plate Size.

Each ..... \$0 10

\$0 18

Per dozen ..... 1 00

1 80

7725—Plates, of rolled Zinc, for Batteries, 3 mm. thick.

5x10 6.3x12.7 7.5x15 8.9x17.7 10x20 11.4x22.8 cm.

Each ..... \$0 11

14

22

28

38

47

Per dozen.. 1 15

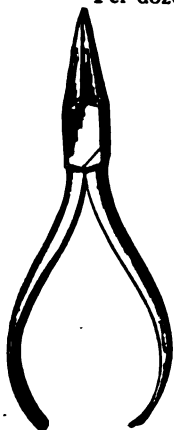
1 50

2 10

2 85

3 80

4 75



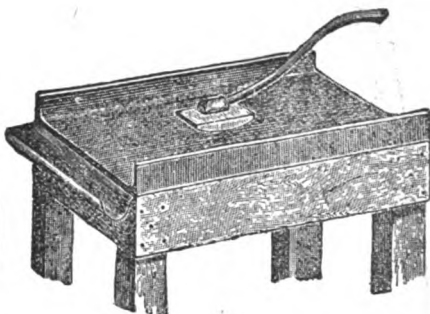
7750 & 7751



7752 & 7753



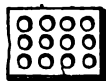
7754



7730



7705



7710



7715 & 7720



7740

\*7730—Plate and Rubber (Bucking Boards), of iron, for pulverizing ore. Prof. Ricketts', with high side rims. The plate as well as the Rubber are finely planed.

45x61 cm.

61x81 cm.

\$13 50

22 50

Platinum Blow-pipe Jets. See No. 3111.

7739—Platinum Apparatus. Any platinum apparatus made to order at lowest prices. For usual platinum apparatus, such as crucibles, dishes, spoons, cones, combustion boats, etc., look for respective headings, as "Crucibles," "Dishes," etc.

\*7740—Platinum Sponges, on wire frame, for hydrogen lamp; each, 80c; per dozen

8 30

Platinum, Spongy. See Chemical Price-List.

\*7750—Pliers, steel, black cast-steel, with bright flat nose.

12 cm., 13 cm., 16 cm.

40c.

50c.

60c.

\*7751—Ditto, ditto, ditto, finely polished, 12 cm.

60

\*7752—Ditto, ditto, black cast-steel, with bright oval nose, the best Button Pliers made, 12 cm.

65

\*7753—Ditto, ditto, ditto, nickel-plated, 12 cm.

1 00

\*7754—Ditto, ditto, bright polished, with bent nose, 13 cm. long

75

\*7760—Ditto, ditto, black cast-steel, with bright round nose, 12 cm.

60

(Illustr. p. 364.)

\*7770—Ditto, ditto, (side cutting Nippers), black cast-steel, bright steel face. (Illustr. p. 364.)

12 cm.

13 cm.

16 cm.

\$0 75

85

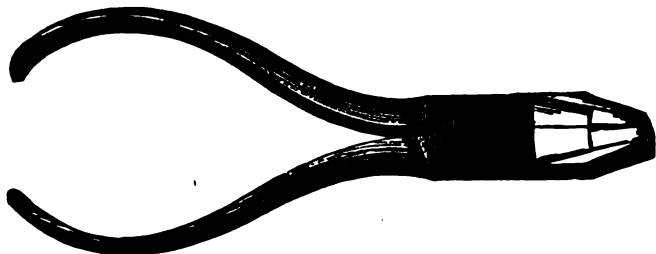
1 00

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

- |   |                      |
|---|----------------------|
| <b>*7771—Pliers, steel, side cutting (Nippers), finely polished, 12 cm.</b>   | <b>\$ 0 90</b>       |
| <b>*7772—Pliers, black cast-steel, side cutting, bright face.</b>   |                      |
| Each  | 10 13 15 cm.         |
|   | \$0 60 75 90         |
| <b>*7780—Ditto, ditto, cutting (Nippers), black cast-steel, bright polished face.....</b>   | 12 cm. 13 cm. 15 cm. |
|   | \$0 95 1 00 1 15     |
| <b>*7781—Pliers, steel cutting, for breaking off small pieces from ores, etc., black cast-steel, extra quality, 15 cm. long .....</b> | <b>1 25</b>          |
| <b>Plumbago Crucibles. See No. 4520.</b>  |                      |
| <b>7790—Poker, of wrought iron, heavy, 50 cm. long; 20c each. Larger sizes at lower rates.</b>  |                      |



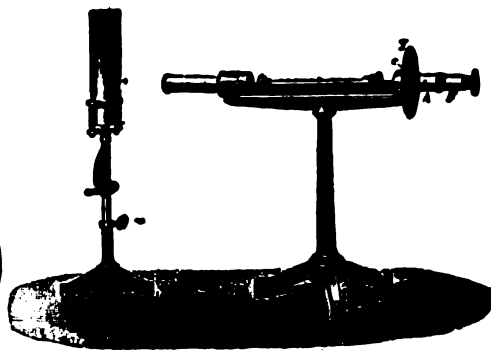
7781



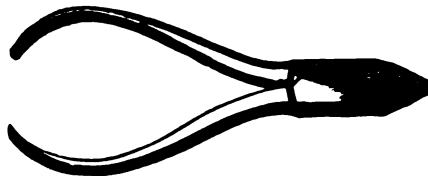
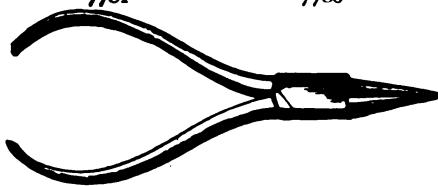
7772



7780

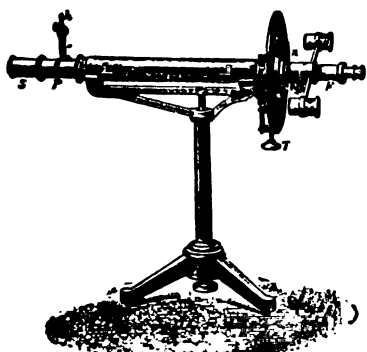


779I

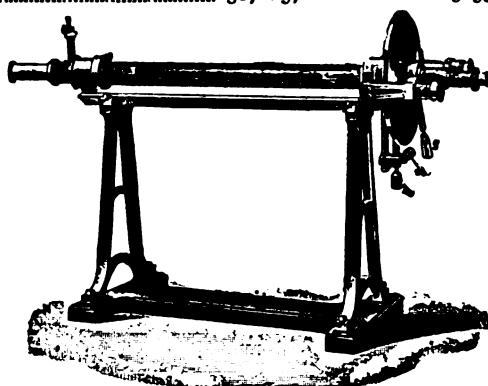


- |            |   |             |         |
|------------|---|-------------|---------|
|            | 7760  | 7770 & 7771 |         |
| *I 7791/1— | <b>Polariscope, Franz Schmidt &amp; Haensch's; Mitscherlich's Half Shade No. 1,</b> especially useful for physicians and chemists in the quantitative determination of sugar in urine. It is provided with a Laurent's Polarizer and graduation in $0.1^{\circ}$ . Price \$72 80; <b>duty free,</b> Two glass tubes (18.9 and 94.7 mm ) for direct reading of the amount of sugar in urine..... | \$11 70     | 8 45    |
|            | Sodium Gas Lamp for same.....   | 13 00       | 9 40    |
|            | Total.....  | \$97 50     | \$70 50 |
|            | If desired, an Absorption Vessel, fitting the Polariscope, for solution of Potassium Bichromate, will be furnished at \$5 85 .....  |             | 4 25    |
| *I 7791/1— | <b>Polariscope, Franz Schmidt &amp; Haensch's; in case; Lippich's Half Shade No. 2, for tubes to 220 mm.,</b> with Absorption Vessel, Polarizer with double field of vision according to Lippich, and graduation in $0.01^{\circ}$ . (Illustr. p. 365.)   |             |         |
|            | Price, \$227 50; <b>duty free</b>   |             | 164 50  |
| I 7791/2—  | Ditto, ditto, but with graduation in Minutes....  | \$27 50     | 164 50  |

I 7791/3—Polariscope, Franz Schmidt & Haensch's; in case; Lippich's Half Shade No. 2, for tubes to 220 mm.; with two graduations, one in $0.01^\circ$ and one in Ventzke degrees. Price \$260 00, duty free \$188 00		
I 7791/4—Ditto, ditto, with graduations in $0.01^\circ$ ; with triple field of vision	292 50,	211 50
I 7791/5—Ditto, ditto, with graduation in Minutes; with triple field of vision	292 50,	211 50
I 7791/6—Ditto, ditto, with two graduations, one in $0.01^\circ$ and one in Ventzke degrees; with triple field of vision	325 00,	235 00
I 7791/7—Ditto, ditto, with graduation in $0.01^\circ$ ; with covered Scale and Mirror Attachment	269 75,	195 05
I 7791/8—Ditto, ditto, with graduation in Minutes; with covered Scale and Mirror Attachment	269 75,	195 05
I 7791/9—Ditto, ditto, with two graduations, one in $0.01^\circ$ and one in Ventzke degrees; with covered Scale and Mirror Attachment	302 25,	218 55
I 7791/10—Ditto, ditto, with graduation in $0.01^\circ$ ; with triple field of vision; with covered Scale and Mirror Attachment	334 75,	242 05
I 7791/11—Ditto, ditto, with graduation in Minutes; with triple field of vision; with covered Scale and Mirror Attachment	334 75,	242 05
I 7791/12—Ditto, ditto, with two graduations, one in $0.01^\circ$ and one in Ventzke degrees; with triple field of vision; with covered Scale and Mirror Attachment	367 25,	265 55



7791/1-12 7792/1-12



7793/1-24

*I 7792/1—Polariscope, Franz Schmidt & Haensch's; in case; Lippich's Half Shade No. 3, for tubes to 400 mm.; with Absorption Vessel, Polariser with double field of vision, according to Lippich, and graduation in $0.01^\circ$ ..... Price \$	260 00, duty free \$	188 00
I 7792/2—Ditto, ditto, but with graduation in Minutes.....	260 00,	188 00
I 7792/3—Ditto, ditto, with two graduations, one in $0.01^\circ$ and one in Ventzke degrees.....	292 50,	211 50
I 7792/4—Ditto, ditto, with graduation in $0.01^\circ$ ; with triple field of vision.....	325 00,	235 00
I 7792/5—Ditto, ditto, with graduation in Minutes; with triple field of vision.....	325 00,	235 00
I 7792/6—Ditto, ditto, with two graduations, one in $0.01^\circ$ and one in Ventzke degrees; with triple field of vision.....	357 50,	258 50
I 7792/7—Ditto, ditto, with graduation in $0.01^\circ$ ; with covered Scale and Mirror Attachment.....	302 25,	218 55
I 7792/8—Ditto, ditto, with graduation in Minutes; with covered Scale and Mirror Attachment.....	302 25,	218 55
I 7792/9—Ditto, ditto, with two graduations, one in $0.01^\circ$ and one in Ventzke degrees; with covered Scale and Mirror Attachment.....	334 75,	242 05
I 7792/10—Ditto, ditto, with graduation in $0.01^\circ$ ; with triple field of vision; with covered Scale and Mirror Attachment.....	367 25,	265 55

APPROXIMATE EQUIVALENTS:  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

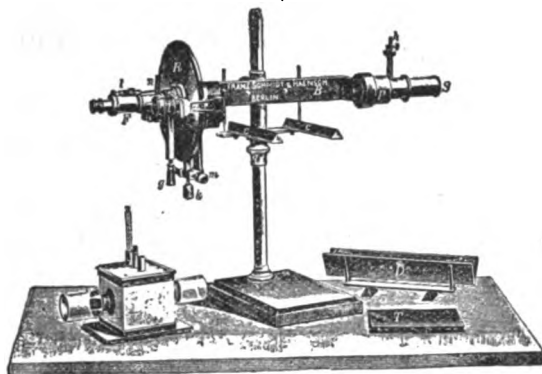
REMEMBER OUR DISCOUNT.

I 7792/11—Polariscope, Franz Schmidt & Haensch's; in case; Lippich's Half Shade No. 3, for tubes to 400 mm., with graduation in Minutes; with triple field of vision; with covered Scale and Mirror Attachment.....	Price \$ 367 25, duty free \$265 55		
I 7792/12—Ditto, ditto, with two graduations, one in 0.01° and one in Ventzke degrees; with triple field of vision; with covered Scale and Mirror Attachment.....	399 75.	"	289 05
*I 7793/1—Polariscope, Franz Schmidt & Haensch's; Lippich's Half Shade No. 4, for tubes 220 mm. Polarizer with double field of vision, according to Lippich, and graduation in 0.01°. Scale movable by hand or micrometrically. Illustr. p. 365.)	Price Without and with Glass Case.	Price Duty Free. Without and with Glass Case.	
	\$260 00 \$283 40	\$188 00 \$204 90	
I 7793/2—Ditto, ditto, but with graduation in Minutes.....	260 00 283 40	188 00 204 90	
I 7793/3—Ditto, ditto, with graduation in 0.01°; with covered Scale and Mirror Attachment.....	302 25 325 65	218 55 235 50	
I 7793/4—Ditto, ditto, with graduation in Minutes; with covered Scale and Mirror Attachment.....	302 25 325 65	218 55 235 50	
I 7793/5—Ditto, ditto, with graduation in 0.01°; with triple field of vision.....	325 00 348 40	235 00 251 90	
I 7793/6—Ditto, ditto, with graduation in Minutes; with triple field of vision.....	325 00 348 40	235 00 251 90	
I 7793/7—Ditto, ditto, with graduation in 0.01°; with triple field of vision; with covered Scale and Mirror Attachment.....	367 25 390 65	265 55 282 50	
I 7793/8—Ditto, ditto, with graduation in Minutes; with triple field of vision; with covered Scale and Mirror Attachment.....	367 25 390 65	265 55 282 50	
I 7793/9—Ditto, ditto, No. 5, for tubes to 400 mm.; with graduation in 0.01°.	292 50 317 85	211 50 229 80	
I 7793/10—Ditto, ditto, ditto, but with graduation in Minutes.....	292 50 317 85	211 50 229 80	
I 7793/11—Ditto, ditto, ditto, with graduation in 0.01°; with covered Scale and Mirror Attachment.....	334 75 360 10	242 05 260 40	
I 7793/12—Ditto, ditto, ditto, with graduation in Minutes; with covered Scale and Mirror Attachment.....	334 75 360 10	242 05 260 40	
I 7793/13—Ditto, ditto, ditto, with graduation in 0.01°; with triple field of vision.....	357 50 382 85	258 50 276 80	
I 7793/14—Ditto, ditto, ditto, with graduation in Minutes; with triple field of vision.....	357 50 382 85	258 50 276 80	
I 7793/15—Ditto, ditto, ditto, with graduation in 0.01°; with triple field of vision; with covered Scale and Mirror Attachment.....	399 75 425 10	289 05 317 40	
I 7793/16—Ditto, ditto, ditto, with graduation in Minutes; with triple field of vision; with covered Scale and Mirror Attachment.....	399 75 425 10	289 05 317 40	
I 7793/17—Ditto, ditto, No. 6, for tubes to 600 mm.; with graduation to 0.01°.	325 00 356 20	235 00 257 55	
I 7793/18—Ditto, ditto, ditto, but with graduation in Minutes.....	525 00 356 20	235 00 257 55	
I 7793/19—Ditto, ditto, ditto, with graduation in 0.01°; with covered Scale and Mirror Attachment.....	367 25 398 45	265 55 288 15	
I 7793/20—Ditto, ditto, ditto, with graduation in Minutes; with covered Scale and Mirror Attachment.....	367 25 398 45	265 55 288 15	
I 7793/21—Ditto, ditto, ditto, with graduation in 0.01°; with triple field of vision.....	390 00 421 20	282 00 304 55	
I 7793/22—Ditto, ditto, ditto, with graduation in Minutes; with triple field of vision..	390 00 421 20	282 00 304 55	

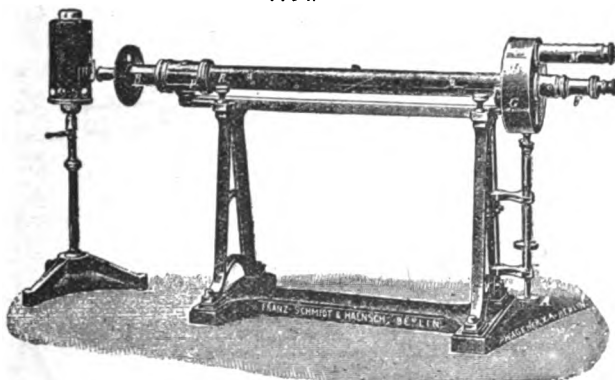


- |   | Price<br>Without and with<br>Glass Case. | Price Duty Free.<br>Without and with<br>Glass Case. |
|---|--|---|
| I 7793/23—Polariscope, Franz Schmidt & Haensch's; Lippich's Half Shade No. 6, for tubes to 600 mm., with graduation in 0.01°; with triple field of vision; with covered Scale and Mirror Attachment.....                      | \$ 432 25 463 45                         | \$ 312 55 335 15                                    |
| I 7793/24—Ditto, ditto, with graduation in Minutes; with triple field of vision; with covered Scale and Mirror Attachment.....  | 432 25 463 45                            | 312 55 335 15                                       |
| *I 7794/1 to 8—Polariscope, Franz Schmidt & Haensch's; Landolt's Half Shade No. 7, for tubes to 220 mm., with Plate and Frame for tubes. Polarizer with double field of vision according to Lippich, and graduation in 0.01°. |  |   |

**THESE POLARISCOPES ARE FURNISHED AT THE SAME PRICES AS NO. 7793/1 TO 8.**



7794/1-8



7795 to 7795/7

- I 7794/9—Heating Apparatus according to Landolt for Polariscope No. 7794/1 to 8 (fig. G); additional.....

27 30  
19 75

**IF DESIRED POLARISCOPES NO. 7791 TO 7794/8 WILL BE FURNISHED WITH AN ARRANGEMENT FOR THE ILLUMINATION OF THE GRADUATION AT AN ADDITIONAL CHARGE OF.....**

7 80  
5 65

- \*I 7795—Polariscope, Franz Schmidt & Haensch's No. 1, Half Shade with double Wedge Compensation, of latest construction, with Lippich's Polarizer; new Reading Arrangement. On pillar support with tripod foot (not as illustrated). With Observation Tubes and Glass Cover.

For tubes	200	400	600 mm.
Each	\$415 35	447 85	496 60
Duty-free, each	300 35	323 85	359 10

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**I 7795/1—Polariscope, Franz Schmidt & Haensch's No. 1, Half Shade with double Wedge Compensation**, of latest construction, with Lippich's Polarizer; new Reading Arrangement. **On pillar support with tripod foot (not as illustrated).** With Observation Tubes and Glass Cover; with protecting cap for wedge compensation.

For tubes	200	400	600 mm.
Each	\$438 75	471 25	520 00
Duty-free, each	317 25	340 75	376 00

**I 7795/2—Ditto, ditto, with triple field of vision.**

For tubes	200	400	600 mm.
Each	\$480 35	512 85	559 60
Duty-free, each	347 35	370 85	406 10

**I 7795/3—Ditto, ditto, with protecting cap for wedge compensation and with triple field of vision.**

For tubes	200	400	600 mm.
Each	\$503 75	536 25	585 00
Duty-free, each	364 25	387 75	423 00

**I 7795/4—Ditto, ditto, but with new support as shown in illustration.**

For tubes	200	400	600 mm.
Each	\$447 85	480 35	529 10
Duty-free, each	323 85	347 35	382 60

**I 7795/5—Ditto, ditto, ditto, with protecting cap for wedge compensation.**

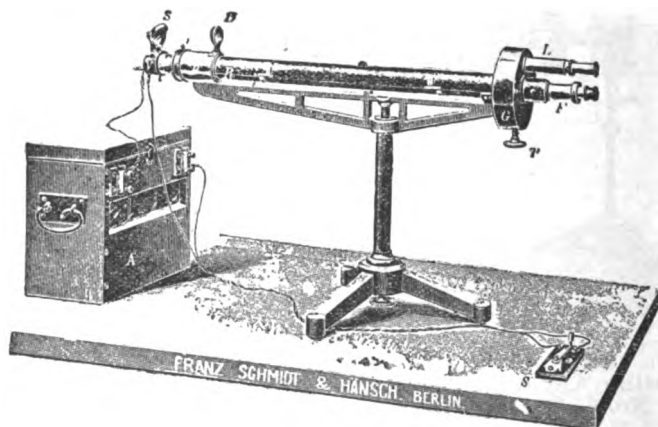
For tubes	200	400	600 mm.
Each	\$471 25	503 75	552 50
Duty-free, each	340 75	364 25	399 50

**I 7795/6—Ditto, ditto, ditto, with triple field of vision.**

For tubes	200	400	600 mm.
Each	\$512 85	545 35	592 60
Duty-free, each	370 85	394 35	429 35

**I 7795/7—Ditto, ditto, ditto, with protecting cap for wedge compensation and with triple field of vision.**

For tubes	200	400	600 mm.
Each	\$536 25	568 75	617 50
Duty-free, each	387 75	411 25	446 50



7796 & 7796/3

**\*7796—Polariscope, Franz Schmidt & Haensch's No. 2, Half Shade, with latest simple Wedge Compensation;** with new Reading Arrangement. **On pillar support with tripod foot;** with Observation Tubes. In mahogany case.

For tubes	200	400	600 mm.
Each	\$285 35	317 85	366 60
Duty-free, each	206 35	229 85	265 10

**I 7796/1—Ditto, ditto, with protecting cap for wedge compensation.**

For tubes	200	400	600 mm.
Each	\$308 75	341 25	390 00
Duty-free, each	223 25	246 75	282 00

REMEMBER OUR DISCOUNT.

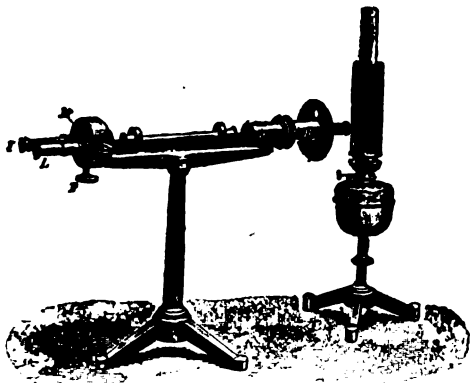
I 7796/2—Polariscope, Franz Schmidt & Haensch's No. 2, Half Shade, with latest simple Wedge Compensation; with new Reading Arrangement. On pillar support with tripod foot; with Observation Tubes. In mahogany case; with triple field of vision.

For tubes	200	400	600 mm.
Each	\$350 35	382 85	431 60
Duty-free, each	253 35	276 85	312 10

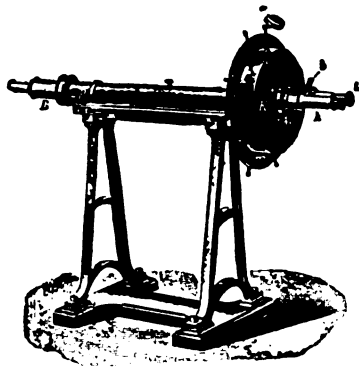
\*I 7796/3—Ditto, ditto, with protecting cap for wedge compensation and with triple field of vision. (Illustr. p. 368).

For tubes	200	400	600 mm.
Each	\$373 75	406 25	455 00
Duty-free, each	270 25	293 75	329 00

THE FOREGOING POLARISCOPES NO. 7796 TO 7796/3, IF FURNISHED WITH SUPPORT AS SHOWN IN ILLUSTRATION NO. 7795 TO 7795/7, COST \$32 50 MORE, AND IF IMPORTED DUTY-FREE, THEY COST \$23 50 MORE.



7797 &amp; 7797/1



7799 &amp; 7799/1

\*I 7797—Polariscope, Franz Schmidt & Haensch's No. 3, Half Shade for Beet Sugar, LATEST CONSTRUCTION, with Ventzke's Scale 0 to 35°, with protecting cap for wedge compensation and mirror for illumination of the scale; including 2 Observation Tubes and Case.

For	200	400 mm. tubes.
Each	\$169 00	188 50
Duty-free, each	122 20	136 30

\*I 7797/1—Ditto, ditto, with triple field of vision.

For	200	400 mm. tubes.
Each	\$234 00	253 50
Duty-free, each	169 20	183 30

I 7798—Polariscope, Franz Schmidt & Haensch's Half Shade for Beet Sugar, Stammer's, most simple construction. Including 2 Observation tubes and Case.

For	200	400 mm. tubes.
Each	\$107 25	133 25
Duty-free, each	77 55	96 35

I 7798/1—Ditto, ditto, with triple field of vision.

For	200	400 mm. tubes.
Each	\$172 25	198 25
Duty-free, each	124 55	141 35

\*I 7799—Polariscope, Franz Schmidt & Haensch's No. 4, Half Shade for Beet Sugar, with magnifying scale of latest construction for rapid work; with support as illustrated and two Observation Tubes.

For	200	400 mm. tubes.
Each	\$292 50	315 25
Duty-free, each	211 50	227 95

\*I 7799/1—Ditto, ditto, with triple field of vision.

For	200	400 mm. tubes.
Each	\$357 50	380 25
Duty-free, each	258 50	274 95

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- I 7809—**Polariscope, Franz Schmidt & Haensch's No. 5 Half Shade, with limited scale for high percent solutions, from 80 to 100 percent, for the direct reading of the percentage in using 400 mm. tube and the total normal weight of 26.048 grammes. Including 2 tubes 400 mm. and case.**

Price.....\$ 195 00  
Duty-free.....141 00

- I 7809/1—**Ditto, ditto, with triple field of vision.**

Price.....260 00  
Duty-free.....188 00

**AS THERE IS NO ZERO POINT IN THESE POLARISCOPIES (NO. 7809 & 7809/1) THE USE OF A NORMAL QUARTZ PLATE FOR CONTROLLING THE SCALE IS RECOMMENDED, AT AN ADDITIONAL COST OF \$19 50. IF IMPORTED DUTY-FREE \$14 10.**

- I 7824—**Polariscope Accessories; for Polariscopes No. 7791 to 7809/1, Franz Schmidt & Haensch's No. 10. Arrangement for electrical illumination, consisting of Bed for Incandescent Lamp with regulating screw and reflecting mirror for the illumination of the scale, connecting wires and current-key, including one incandescent lamp (6 volts) (See fig. 7796 to 7796/3)**

.....32 50

If imported duty-free.....23 50

**No. 11—Incandescent Lamps, 6 volts, for above, each**.....1 65

If imported duty-free.....1 20

**No. 12—3 Accumulators for 100 hours, contained in a case**

(Shown in fig. 7796 to 7796/3).....45 50

If imported duty-free.....32 90

If a current of 110 volts is available, the Accumulator may be changed, by passing the current through the Resistance No. 13 and the Accumulator No. 13.

**No. 13—Incandescent Lamp Resistance with 6 Incandescent Lamps**.....15 60

If imported duty-free.....11 30

In order to charge the Accumulator properly and to be able to examine it while in use, Voltmeter No. 14 should be used.

**No. 14—Voltmeter, 0 to 10 Volts**.....24 40

If imported duty-free.....17 65

If for any reason electrical illumination is not desired Illuminating Tube No. 100 may be used.

**No. 100—Illuminating Tube for use with Gas or Kerosene Light**.....6 50

If imported duty-free.....4 70

- I 7824/1—**Polariscope Accessories, Franz Schmidt & Haensch's.**

**No. 6.—Observation Lamp, for gas, patented, with Argand Burner. Chimney nickel-plated inside and 2 Reserve Glass Chimneys.**

13 65

If imported duty-free.....9 90

**No. 7.—Observation Lamp, for gas, patented, with "Auer" Burner (see fig. 7795 to 7795/7), Chimney nickel-plated inside and 2 Reserve Glass Chimneys. This lamp gives a very intense light.**

15 60

If imported duty-free.....11 30

**No. 8.—Observation Lamp, for kerosene, patented, with round Burner (see fig. 7797 to 7797/1), Chimney nickel-plated inside and 2 Reserve Glass Chimneys.**

13 65

If imported duty-free.....9 90

**No. 9.—Observation Lamp, electrical, patented, on adjustable support, 32 C. P. Lamp and Cylinder, including connecting wires, etc.**

17 55

If imported duty-free.....12 70

- I 7824/2—**Polariscope Accessories, Franz Schmidt & Haensch's.**

**No. 9.—Gas Sodium Lamp. Bunsen Burner, with Platinum Ring for Na Cl (see fig. 7791)**

13 00

If imported duty-free.....9 40

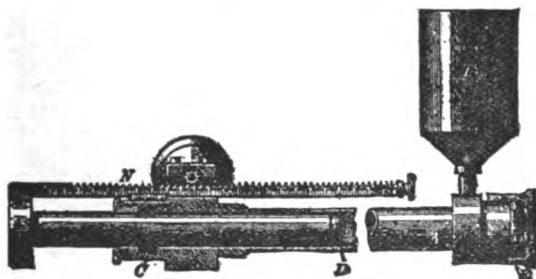
**No. 10.—Alcohol Sodium Lamp. In this burner the Bunsen Burner is replaced by a Barthel's Alcohol Lamp, so that the lamp can be used, where gas is not available.**

16 25

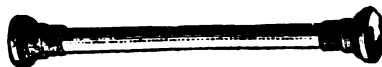
If imported duty-free.....11 75

REMEMBER OUR DISCOUNT.

I 7824/2—Polariscope Accessories, Franz Schmidt & Haensch's. No. 11.—Gas Sodium Lamp, according to Landolt. Bunsen Burner with 2 Platinum Gauze Holders for Na Cl; with Cylinder on adjustable support	\$ 24 40
If imported duty-free	17 65
*I 7827—Polariscope Accessories. Polariscope Control Tube, for Half Shade Polariscopes, for 200 mm. tube instruments. Each.	39 00
*I 7828—Ditto, ditto, for 400 mm. tube instruments.	42 25
*I 7829—Ditto, ditto, for 600 mm. tube instruments.	45 50
7830—Ditto. Polarization Tubes, glass, 100 and 200 mm. long, accurately adjusted. Each	1 25
*7831—Ditto, ditto, mounted	5 20
I 7832—Ditto, ditto, brass, mounted	5 85
I 7834—Ditto. Conversion and Observation Tubes, according to Prof. Landolt, with center tube for thermometer and with brass jacket for water circulation; 100 mm. tube; each	10 40
I 7834/1—Ditto, ditto; 200 mm. tube; each	11 70
I 7834/2—Ditto, ditto; 400 mm. tube; each	13 65
I 7834/3—Ditto. Thermometer for No. 7834 to 7834/2, of Jena Normal Glass	3 90
I 7834/4—Ditto. Observation Tubes, Landolt's, new form, with sliding caps, which are instantly adjusted, saving considerable time, as compared with the screw-cap.	
Glass; each	100 200 400 mm. tubes. \$5 20 5 20 5 85
I 7834/5—Ditto, ditto, Brass, nickel-plated; Each	\$5 85 5 85 6 50
I 7834/6—Ditto, ditto, Pellet's, for continuous flow.	
Each	100 200 400 mm. tubes. \$12 35 12 35 13 00



7827 to 7829



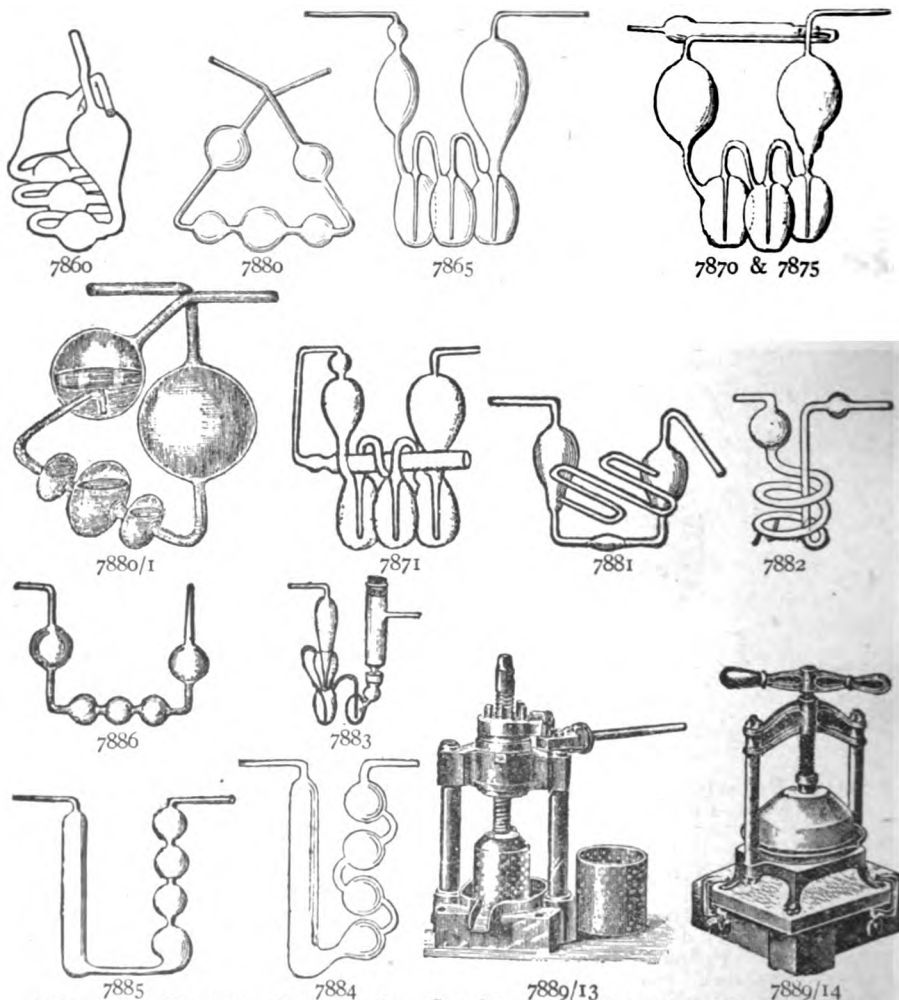
7831

I 7834/7—Polariscope Accessories. Observation Tubes, patented (D. R.-Pro4.846), mounted, with screw-cap.	
Each	100 200 400 mm. tubes. \$5 85 5 85 6 50
I 7834/8—Ditto. Glass Covers for Observation Tubes No. 7834/7; dozen	2 95
I 7834/9—Ditto. Rubber Washers for Observation Tubes No. 7834/7; dozen	55
7835—Ditto. Polarization Tube Covers; doz	1 25
I 7836—Ditto, ditto, Franz Schmidt & Haensch's; doz	2 20
7840—Ditto. Rubber Washers for Polarization Tubes; doz	35
I 7850/1—Ditto. Polariscope Quartz Testing Plates, optically clear, mounted according to directions of the Physikalisch-Technische Reichsanstalt, for any range as desired from 25 to 100° Ventzke; each	16 25
I 7850/2—Ditto, ditto, from -15 to +25° and for Polariscopes No. 7809 and 7809/1; each	23 40
I 7855—Polarizing Apparatus, according to Noerremberg, latest form, with Nicol and draw-tube	126 00
I 7855/1—Ditto, ditto, with Goniometer	144 00
I 7855/2—Ditto, ditto, vertical, according to Calderon	148 50
I 7855/3—Ditto, ditto, with Stauroscope	171 00

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*7860—Potash Bulbs, Alvergnat's.....				\$ 1 05
*7865—Ditto, Geissler's.....				1 05
*7870—Ditto, Geissler's, with drying tube attached.....				1 50
*7871—Ditto, ditto, with drying tube between the bulbs.....				1 50
*7875—Ditto, ditto, with drying tube and ground joint.....				1 85
*7880—Ditto, Liebig's.....				62
*7880/1—Ditto, Liebig's, latest modification.....				1 05
*7881—Ditto, Schloesing's.....				90
*7882—Ditto, Winkler's.....	small.	large.	extra large.	
	\$0 90	1 35	2 25	
*7883—Ditto, Strohmmer's.....				1 90
*7884—Ditto, Koninck's.....				95
*7885—Ditto, Mitscherlich's.....				62
*7886—Ditto, Ure's.....				80

REMEMBER OUR DISCOUNT.



7886/1, etc.—Presses, Hydraulic. See Catalogue of Physical Apparatus.  
 \*I 7889/13—Presses, for Almond Oil and Oil Seed. They are constructed specially for materials requiring a high pressure for obtaining the liquid. They are furnished also with a pressure-vessel for herbs.

	Size	No. 1	2	3
Capacity of pressure-vessel for seeds.		2	4	6 liters.
Capacity of pressure-vessel for herbs.		6	12	16 liters.
Actual net pressure in Kilos.		27000	42000	48000
Price		\$150 00	200 00	340 00

\*7889/14—Presses, Witt's, provided with porcelain plates, resisting great pressure. Useful for compressing alkaline or acid substances.....

\*7890—Presses, Tincture, improved style. Used also as Meat Presses.

Approximate Capacity	1 lit.	2 lit.	4 lit.	8 lit.
	\$4 55	5 80	10 00	15 00

Pressure Bottles. See No. 3268.

\*7900—Prisms, finest Bohemian flint glass, solid.

	75	100	125	150	180	200 mm.
Each	\$0 40	50	75	1 00	1 55	2 00

\*7905—Ditto, ditto, with handle.

	75	100	125	150	180	200 mm.
Each	\$0 27	40	60	75	1 10	1 35

7905/2, etc.—Other Prisms. See Catalogue of Physical Apparatus.

\*7910—Prisms, of cut Bohemian glass, hollow, with ground glass stopper, for indigo solution.

\$ 2 20

\*7915—Ditto, for bisulphide of carbon, 3 cornered.

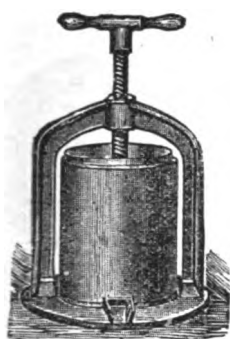
8 75

\*7916—Ditto, for bisulphide of carbon, 4 cornered.

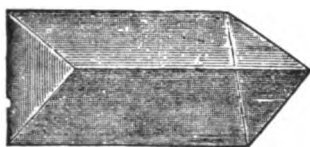
12 00

\*7917—Ditto, for bisulphide of carbon, with parallel polished bells, each.

80 00



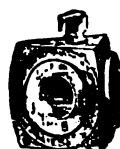
7890



7900



7916



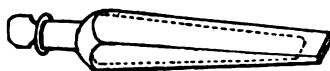
7917



7920



7905



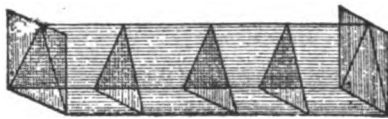
7910



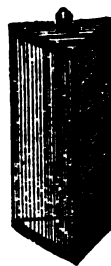
7918



7918/1



7918/2



7918/3

\*I 7918—Prismatic Troughs. Two of these troughs connected as shown in the illustration form an absorption vessel with parallel walls, the width of which can be changed in an instant.

100 mm. long	140 mm. long	180 mm. long
40 mm. high.	45 mm. high.	45 mm. high.

Per pair, \$12 50      18 60      25 00

\*I 7918/1—Ditto, for colorimeters.

150x20x25 mm.

150x35x25 mm.

Per pair, \$8 80      11 10

\*I 7918/2—Ditto, with partitions, 50 mm. long and 55 mm. wide, with loose cover.

With 1 2 3 4 compartments.

Each, \$7 90 13 50 18 60 25 00

\*I 7918/3—Ditto, with ground stopper; suitable for any liquid. Made of clearest crystal mirror glass.

75 mm. high & 35 mm. wide. 90 mm. high & 60 mm. wide.

Each, \$9 00      13 50

Probangs, for cleaning test-tubes. See No. 9130.

\*7920—Proof Glass, with heavy bottom to take samples from barrels.

7930, etc.—Pulse Glasses. See Catalogue of Physical Apparatus.

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*7935—**Push Buttons**, walnut, for electric bells; per dozen, \$2 75; each..... \$ 0 25  
 \*7936—Ditto, bronzed iron; per dozen, \$6 00; each..... 60  
 \*7951—**Pyrometer. Horizontal 18 cm. Dial Graphite Pyrometers**, for indicating the heat of Blast Furnaces, Hot Air Pipes, Boiler Flues, Galvanizing and Lead Baths, Tinning Pots, Baker's Ovens, Oil and Tar Stills, Superheated Steam, etc. The pyrometers of the most improved scientific pattern are especially constructed for insertion through walls, varying in thickness, and for metal baths fluctuating in depth. In a nickel steel tube welded on the end a graphite bar is enclosed, on which rests a triple jointed expansion rod, which acts on a lever attached to the mechanism of the dial plate.  
 Registering from 0 to 800° Fahrenheit, stem not over 45 cm. long..... 41 50  
 Registering from 0 to 1200° Fahrenheit, stem not over 45 cm. long..... 50 00  
 \*\*7952—Ditto, ditto. **Horizontal or Vertical 18 cm. Dial.**  
 13 mm. Expansion Stem, registering from 0 to 1200° Fahrenheit..... 50 00  
 19 mm. Expansion Stem, registering from 0 to 1800° Fahrenheit..... 72 25

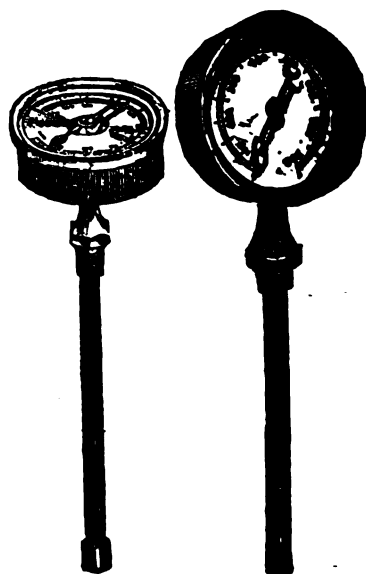
REMEMBER OUR DISCOUNT.



7935



7936



7951 &amp; 7952

7952

- \*7952/2—**Pyrometer, Portable Platinum**, for Annealing, Tempering and Case Hardening Ovens, also for Kilns, Glass Bending Furnaces, etc., registering to 3000° Fahrenheit.

This improved instrument will indicate temperatures up to a white heat, and will remain accurate. It is designed for the use in Annealing and Case Hardening Ovens and also for Ovens in Glass Works. A stationary Pyrometer would soon be destroyed by the intense heat. It is quick in action, and is immersed through the brick wall or spyhole in the door of the oven, and will show the correct temperature in a few seconds. After a test is made, it is taken out, and on cooling, which takes about 20 minutes, it can be used again.

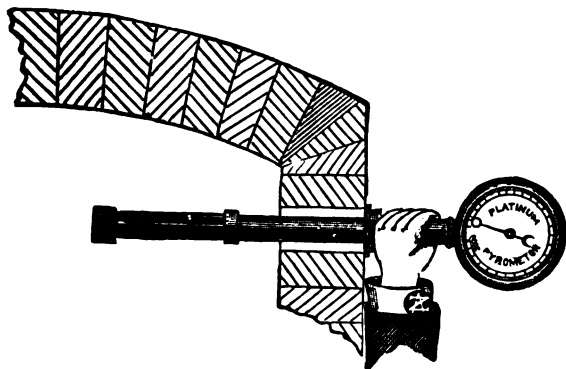
In ordering this Pyrometer, state thickness of brick wall. The hole in which it is inserted must be 70 mm. (2¾ inches) in diameter. (Illustr. p. 375.)

165 00

- \*I 7953—**Pyrometer, according to Wedgewood**, for the determination of high temperatures, with 12 clay cylinders. (Illustr. p. 375.)..... 22 50  
 Extra clay cylinders; per dozen..... 1 00  
 I 7953/1—**Pyrometer (Graphite Pyrometer)**, for temperatures to 1500° C., for technical use..... 112 50



- \*I 7954—**Pyrometer, Electric**, according to Le Chatelier, for temperatures up to 1500° C., in porcelain tubes, with gauged galvanometer. Thermo-element, consisting of a **platinum wire** and a **platinum rhodium wire**, contained in 2 porcelain tubes. For continuous reading of temperatures on the galvanometer scale.....\$ 342 00
- I 7954/1—Ditto, ditto, provided with a protecting tube of pure nickel..... 450 00
- \*I 7955—**Pyrometer. Siemens' Water Pyrometer**, for temperatures to 1000° C., with thermometer and 6 copper cylinders..... 108 00  
Complete in case ..... 119 00
- I 7955/1—Ditto, ditto, with 6 wrought-iron cylinders..... 108 00  
Complete in case ..... 119 00
- I 7955/2—**Platinum Cylinder**, weighing about 400 grammes, for **Siemens' Water Pyrometer No. 7955**, for temperatures up to 1500° C.; at lowest market price.



7952/2

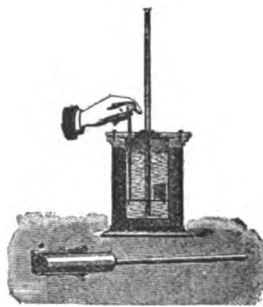
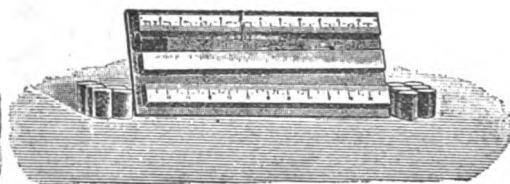


Fig. 1917, No. 5534, 1/2 mt. Grdn.

7955/3



7954



7953



7954

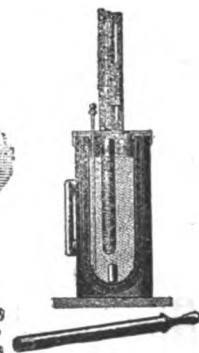


Fig. 1916, No. 5536, 1/2 mt. Grdn.

7955

- \*I 7955/3—**Pyrometer. Salleron's Water Pyrometer**, for temperatures up to 1100° C. Copper vessel in brass jacket, with wooden cover, with 6 nickel cylinders, 100 grammes each, and thermometer..... 99 00
- I 7955/4—**Platinum Cylinder**, weighing about 100 grammes, for **Salleron's Water Pyrometer**, for temperatures up to 2000° C.; at lowest market price.
- 7957—**Pyrometer Cones, Seger's**, for use in the ceramic industry. Set of 35 cones, from 1150 to 2000° C..... 1 70  
Per 100 cones ..... 4 75
- 7957/1—**Pyrometer Metal**, called **Princep's Metal**, of various melting points, from 315° C. to 1385° Celsius. **Prices on application.**
- \*.\*7958—**QUARTZ APPARATUS, MADE OF FUSED QUARTZ (SILICIC ACID)** (Illustr. p. 376):  
No. 1—**Tubes**, in length up to 1 meter and more, with **light walls**,  
20 mm. 10 mm. 5 mm. diameter.  
Per 10 centimeters..... \$15 00 7 50 5 00  
All other sizes at similar rates.

**APPROXIMATE EQUIVALENTS**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=490 grm.

**\*7958—Quartz Apparatus, made of fused Quartz (Silicic Acid).**  
(Continued.)

No. 2—**Tubes**, in lengths up to 1 meter and more, with heavy walls,  
20 mm. 10 mm. 5 mm. diameter.  
Per 10 centimeters..... \$25 00 12 50 7 00  
All other sizes at similar rates.

No. 3—**Capillary Tubing**,  
about 7 mm. 5 mm. 3 mm. outside diameter.  
Per 10 centimeters..... \$15 00 12 00 8 00

No. 4—**Protecting Tubes for Pyrometers**,  
about 10 to 12 mm. outside diameter.  
Per 10 centimeters..... \$10 00 to 15 00

No. 5—**Test-tubes**, according to size; each \$10 00 to \$40 00

\*No. 6—**Flasks, with round bottom**,  
Body of flasks holding about 15 cc. 30 cc. 60 cc.  
Each..... \$15 00 20 00 30 00

No. 7—**Flasks, with flat bottom and long narrow neck**;  
about 15 cc. 30 cc. 60 cc. capacity.  
Each..... \$15 00 20 00 30 00

No. 8—**Flasks, with flat bottom and short wide neck**;  
about 15 cc. 30 cc. 60 cc. capacity.  
Each..... \$15 00 20 00 30 00

\*No. 9—**Flasks, with round bottom and side-tube (Distillation Flasks)**, about 15 cc. 30 cc. 60 cc. capacity.  
Each..... \$25 00 35 00 45 00

\*No. 10—**Beakers** to 150 cc. capacity, each from \$10 00 to 50 00.

No. 11—**Crucibles**, about 10 cc. 15 cc. 30 cc. capacity.  
Each..... \$10 00 15 00 25 00

No. 12—**Covers for Crucibles**,  
Each..... \$6 00 9 00 12 00

No. 13—**Dishes, hemispherical or with flat bottom**, to 5 cm. diameter (30 cc. capacity); each from \$10 00 to 25 00.

No. 14—**Air Thermometer Tubes**, with capillary tube about 30 cm. long and 6 mm. diameter.

Capacity about 50 cc. 100 cc. 150 cc. 200 cc. 250 cc. 300 cc.  
Each..... \$60 00 75 00 90 00 105 00 115 00 125 00

If desired they can be furnished with longer capillary tubes at correspondingly higher prices.

No. 15—**Bulb Tubes**; bulbs up to 5 cm. diameter, according to size of bulb and length of tube; each from \$10 00 to 30 00.

No. 16 **Weighing tubes** with stopper ground in, according to size, each, from \$12 00 to 25 00.

**Other Apparatus made of fused Quartz made to order!**

REMEMBER OUR DISCOUNT.



7958 No. 6



7958 No. 9



7958 No. 10



7970 &amp; 7971



7971

7960, etc.—**Radiometers**. See Catalogue of Physical Apparatus.

\*7970—**Receivers, of best Bohemian glass, plain**

60 cc.	125 cc.	250 cc.	500 cc.	1 lit.	2 lit.	4 lit.	8 lit.
\$0 15	19	27	35	45	65	1 15	2 10

\*I 7971—**RECEIVERS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, PLAIN.**  
Superior in shape and quality to any other receivers. Each receiver bears our trade-mark. (For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

Approx. capacity.	70	150	250	500 cc	1	2	4	8 lit.
Each	\$0 20	24	33	47	60	95	1 55	3 35

\*7980—Receivers, of best Bohemian glass, tubulated, with ground glass stopper.

60	125	250	500 cc.	1	2	4	8	12	18 lit.
\$0 25	31	37	56	70	90	1 35	2 50	4 00	6 75

\*I 7981—RECEIVERS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, TUBULATED, WITH GROUND GLASS STOPPER. Superior in shape and quality to any other receivers. Each receiver bears our trade-mark. (For note on H. H. C. Co.'s Bohemian Normal Glass, see Preface.)

	70	150	250	500 cc.	1	2	4	8	12	15 lit.
Each	\$0 30	35	45	67	90	1 30	2 10	4 00	6 00	9 00

\*7990—Receivers, of best Bohemian glass, tubulated on both sides.

250 cc.	500 cc.	1 lit.
\$0 70	85	1 25

\*8000—Ditto, ditto, quilled.

250 cc.	500 cc.	1 lit.
\$0 80	95	1 35

\*8010—Ditto, Florentine Oil, used for collecting essential oils in distilling.

500 cc.	1 lit.	2 lit.
\$0 75	1 00	1 50

\*8020—Ditto, Cooper's Mercurial, for gas.....

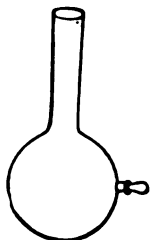
\$ 0 40

\*8021—Ditto, ditto, with stopper.....

63

\*8025—Ditto, for small alcoholic distillations; also used as a dripping glass for acids; with extra in- and out-flow .....

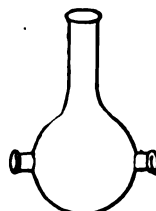
90



7980-7981



7981



7990



8000



8010



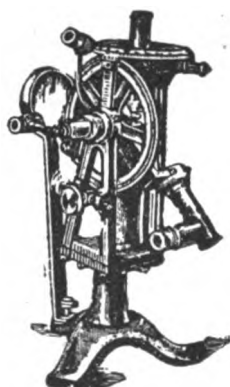
8020



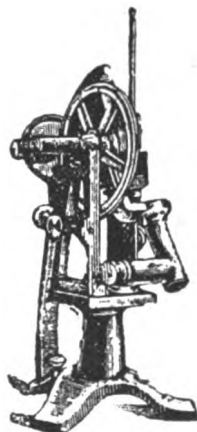
8021



8025



8027/3



8027

\*I 8027—Refractometer for Chemists, according to Pulfrich, for determining the refraction exponent of liquids, with condensing lens and magnifier. Refraction of prism 1.61 .....

127 50

I 8027/1—Ditto, ditto, with heating arrangement, for determining the refraction exponents at higher temperatures; without burner.....

180 00

I 8027/2—Prism 1.74 for Refractometers No. 8027 and No. 8027/1, for determining the higher refraction exponents of liquids. If wanted, it must be ordered at the same time the Refractometers are ordered.....

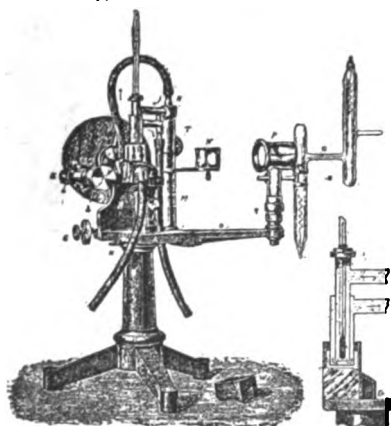
44 00

\*I 8027/3—Refractometer, for examining crystals. Refraction of prism 1.75 .....

240 00

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- I 8027/4—**Prism**, so that Refractometer No. 8027/3 can be used in the same manner as No. 8027. If wanted, it must be ordered at the same time the Refractometer No. 8027/3 is ordered ..... \$ 44 00
- \*I 8027/5—**Refractometer, according to Pulfrich, latest Universal Apparatus for refractometric and spectrometric examinations** (Zeitschr. f. Physik, Ch. 18, 294-299 and Zeitschr. f. Instrumentenk. 1895, 15, 389.)  
**Without Prisms** ..... 304 00  
**Extra Parts:**
- |       |         |       |       |       |       |  |
|-------|---------|-------|-------|-------|-------|--|
| Prism | I       | II    | III   | IV    | V     |  |
| Each, | \$32 00 | 36 00 | 40 00 | 56 00 | 64 00 |  |
- Heating Apparatus..... 48 00  
 Heating Arrangement..... 32 00  
 Thermometer ..... 2 00
- I 8027/6—**Refractometer, according to Abbe, of Zeiss, designed mainly for determining the refractive and dispersive powers of liquids. In case, with lock and key and directions** ..... 173 30
- I 8027/7—**Ditto, ditto, with heating arrangement according to Wollny**..... 200 00
- I 8027/8—**Thermometer for No. 8027/6 and 7** ..... 1 85
- \*I 8027/9—**Refractometer; Zeiss' Butyro-Refractometer, for distinguishing oleomargarine from butter, also for the refractometric examination of fats and oils, for determining the amount of water in concentrated solutions of glycerine (exact to  $\frac{1}{2}\%$ ) and for similar purposes. In case with directions** ..... 113 30
- I 8027/10—**Ditto, ditto, with heating arrangement** ..... 153 30
- I 8027/11—**Thermometer, divided in  $\frac{1}{4}^{\circ}$ , for No. 8027/9 and 10** ..... 1 85



8027/5



8027/9



8028



8050-8051



8051

- \*8028—**Respirators, Hurd's patent.** The most perfect device for protecting the lungs and throat from dust and poisonous gases. Made of soft rubber, durable, light and easy to wear. The air is inhaled through a thin, wet sponge and exhaled through an automatic valve. It gives a constant supply of fresh air. Each ..... 3 30
- I 8030—**Retorts, of clay, Battersea, tubulated and stoppered, similar to No. 8055.**

Approx. Cap. 125 250 500 750 1000 cc. 1.5 2 3 4 6 8 16 lit.

\$0 75 80 1 20 1 75 2 15 2 60 3 10 3 80 4 15 5 00 8 35 12 00

- 8040—**Ditto, of copper, tin-lined, for distilling water, alcohol, etc.; the retorts alone, see fig. 1580. Approx. Capacity** 2 lit. 4 lit. 8 lit. 12 lit. 20 lit.  
 \$8 50 10 50 14 65 17 75 22 50

\*8050—Retorts, of best Bohemian glass, plain. (Illustr. p. 378.)

6occ. 125cc. 250cc. 500cc. 1 lit. 2 lit. 4 lit. 8 lit.

\$0 15 10 27 35 50 70 1 25 2 10

\*\*I 8051—RETORTS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, PLAIN. Superior in shape and quality to any other retorts. Each retort bears our trade-mark. (Illustr. p. 378.)

(For note on H. H. C. Co.'s Bohemian Normal Glass, see Preface.)

Each, 70 150 250 500 cc. 1 2 4 8 liters.  
\$0 20 24 33 47 60 95 1 55 3 35

\*8055—Retorts, of best Bohemian glass, tubulated, with glass stoppers.

60 cc. 125 cc. 250cc. 500 cc. 1 lit. 2 lit.

\$0 25 31 40 60 75 90

4 lit. 8 lit. 12 lit. 18 lit.

\$1 50 2 90 4 50 6 80



8055 & 8055/1



8056



8055/1



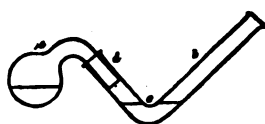
8060 & 8061



8070



8057



8065

\*I 8055/1—RETORTS, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, TUBULATED, WITH GROUND GLASS STOPPER. Superior in shape and quality to any other retorts. Each retort bears our trade-mark.

(For note on H. H. C. Co.'s Bohemian Normal Glass, see Preface.)

Each, 70 150 250 500cc. 1 2 4 8 12 18 lit.  
\$0 30 35 45 67 90 1 30 2 10 4 00 6 00 9 00

\*8056—Retorts, of best Bohemian glass, plain, with two necks.

Each, 250cc. 500cc.  
\$0 75 1 00

\*8057—Ditto, ditto, tubulated and stoppered, with receiver ground on.

Each, 50cc. 100cc. 250cc. 500cc.  
\$0 75 90 1 35 2 00

\*8060—Retorts, of hard Bohemian glass, with two bulbs on the neck.

125cc 250cc.  
\$0 50 70

\*8061—Retorts, of infusible Bohemian glass, with two bulbs on the neck.

125cc. 250cc.  
\$0 80 1 00

\*8065—Ditto, Clark's, of light German glass, with tube receiver attached..... \$0 60

\*8070—Ditto, of cast-iron, for distilling mercury, with loose flat cover, fastened to the body by clamp and screw; with iron conducting pipe.

Approx. Cap. 125 250 500 750cc. 1 lit. 1.5 lit. 2 lit.  
\$2 35 2 65 3 30 3 75 4 00 5 25 5 75  
3 lit. 4 lit. 7.6 lit. 18 lit.  
\$8 00 8 30 10 00 50 00

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=360 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*8071—**Retorts, Normal School**, called also "Normal School Crucible," devised by Prof. S. T. Skidmore, of the Philadelphia Normal School. Each

\$ 1 25

\*8090—**Retorts, of lead**, for manufacturing hydrofluoric acid, etc.

Approx. Cap.	500cc.	1 lit.	2 lit.	4 lit.	8 lit.	18 lit.
	\$7 50	10 50	15 00	18 00	22 50	37 50

\*8100—**Retorts, of platinum, imported to order at lowest prices!**

\*8110—**Ditto, of Berlin porcelain**, tubulated and stoppered.

125 cc.	250 cc.	500 cc.	1 lit.	2 lit.	3 lit.
\$1 25	1 60	2 25	3 00	4 60	6 50

8120—**Riders, of aluminium or platinum**, for Troemner's analytical and assay balances.

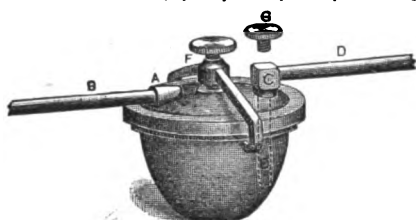
1 mgrm.	1 mgrm.	2 mgrm.	5, 6, 10 and 12 milligrammes.
Each	\$0 78	64	43

8121—**Ditto, ditto**, for Becker's analytical and assay balances.

1 mgrm.	2 mgrm.	5, 6, 10 and 12 milligrammes.
Each	\$0 78	57

8122—**RIDERS, for HEIL'S analytical and assay balances.**

1 mgrm.	1 mgrm.	2 mgrm.	3, 5, 6, 10 and 12 milligrammes.
Each	\$ 78	78 64	57 43



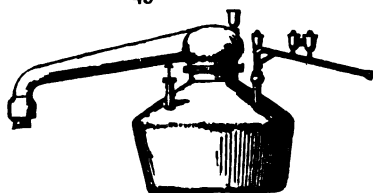
8071



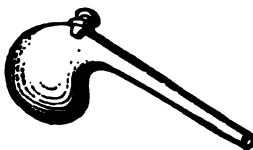
8130



8140



8100



8110



8090

\*8130—**Rings, of iron, concentric.**

Outside diameter.....	3 in set smallest, largest, 89 165 mm.	6 in set smallest, largest, 89 305 mm.
	\$0 33	65

8131—**Rings, of iron, for our Ring** Per set  
Stands, No. 8862 and 8863.

Set for.....	2 ring	3 ring	4 ring stand.
Per set.....	\$0 65	90	1 50
Smallest Ring for 2 ring stand.....			
Largest Ring for 2 ring stand.....			
Smallest Ring for 3 ring stand.....			
Second Ring for 3 ring stand.....			
Largest Ring for 3 ring stand.....			
Smallest Ring for 4 ring stand.....			
Second Ring for 4 ring stand.....			
Third Ring for 4 ring stand.....			
Largest Ring for 4 ring stand.....			

8132—**Rings, of iron, Extension, for our 3 Ring** small medium large.  
Stands, No. 8870. Without fasteners.

Each.....	\$0 30	35	40
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8137—**Rings, concentric, of copper, tinned inside, for water-baths, etc.**

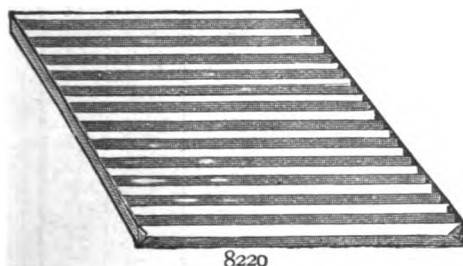
For water-baths	10	12.7	14	15.25	20.3	25.4 cm.
Price per set	\$0 70	75	85	90	1 25	2 00

\*8140—**Ditto, of Berlin porcelain.**

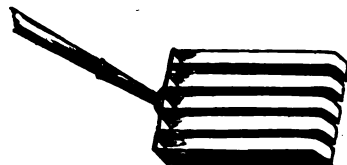
9 in a set, largest 18 cm. diameter; per set.....	1 50
6 in a set, largest 15 cm. diameter; per set.....	1 25

REMEMBER OUR DISCOUNT.

- 8150—**Rings, of straw**, to support retorts, dishes, etc.  
Outside diameter, 9 13 16 18 21 23 26 31 cm.  
\$0 35 40 50 55 75 85 95 1 33
- 8159—**Rods, of fire clay, Battersea**, for stirring, about 25 cm. long, about 19 mm. diameter, each..... \$ 0 50
- 8160—**Rods, of German glass**, free from lead, in length of 100 to 184 cm., 1 to 18 mm. diameter; per kilo \$1 50; per hecto..... 20
- 8161—**Rods, of German glass**, free from lead, 25 mm. diameter, 30 cm. long; each..... 1 25
- 8170—Ditto, ditto, with round ends (stirring rods).  
Length..... 20 cm. 25 cm. 40 cm.  
Diameter..... 3 to 4 mm. 4 to 5 mm. 6 to 9 mm. } By the kilo. 1 80  
Dozen..... \$0 25 40 85  
Each..... 05 05 10
- 8176, etc.—**Rotator for Geissler's Tubes**. See Catalogue of Physical Apparatus.
- 8179/2—**Rubber Bands**. We buy same for our customers, charging a small commission.
- 8179/3—**Rubber Caps**, for syphoning acids from carboys; each..... 3 00  
**RUBBER HOSE, from 2-ply to 6-ply and from 13 mm. to 255 mm. inside diameter, in any quality, at lowest prices!**
- 8179/4—**Rubber Policemen**, to be used as caps on glass-rods for cleaning beakers. Each, \$0 10; per dozen..... 1 00
- 8180—**Rubber Sheet**, of pure rubber; per hecto \$1 40; per kilo..... 9 90
- 8181—Ditto, vulcanized, white; per square meter..... 1 50
- Rubber Stoppers**. See No. 8700-10.
- 8190—**Rubber Tissue**; per kilo. \$10 50; per hecto..... 1 40
- Rubber Tubing**. See No. 9815, etc.



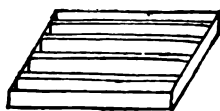
8220



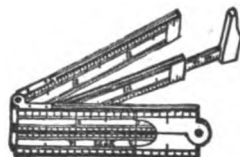
8230



8240



8221



8201

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- 8200—**Rules**, of boxwood, 2 ft., 4 fold; each, \$0 45; per dozen..... 4 50
- 8200/1—Ditto, ditto, 2 ft., 4 fold, inches on one side, centimeters on the other side; each \$0 60; per doz..... 6 00
- \*8201—Ditto, folding, 1 ft., divided into inches on one side and into centimeters and millimeters on the other, of hardwood, with caliper extension..... 65
- 8202—Ditto, folding, ivory in german silver frame, divided into inches and centimeters..... 3 35
- 8205, etc.—**Rules in one piece**. See Catalogue of Physical Apparatus.
- 8210—**Rupert's Drops**. See Catalogue of Physical Apparatus.
- \*8220—**Sampler**, of tin, 30 cm. square, with 12 bars, corresponding to 24 partitions, the only perfect sampler made..... 1 50
- \*8221—Ditto, of tin, usual size, with 4 bars..... 65
- \*8230—**Sample Shovel**, of heavy copper, for smelters and sampling works.  
small large  
\$8 75 10 00
- 8235—**Sampling Cloth**, thin, white, very pliable oil cloth, specially made for mixing ore, 114 cm. wide; per meter..... 1 35
- \*8240—**Sand Baths**, of Russian sheet iron, shallow form.  
Diameter 5 6 7.5 10 12.5 15 20 25 cm.  
Each..... \$0 12½ 13 13 18 25 30 37 65

\*8245—**Sand Baths**, of Russian sheet iron, deep form.

Diameter	9	10	12.5	15	20	25 cm.
	\$0 16	19	31	45	75	1 10

\*8246—Ditto, of Russian iron, **tinned**, deep form.

Diameter	108	120	127	137	152	165	175 mm.
Each.....	\$0 12	14	17	21	25	30	34
Per doz.	1 20	1 40	1 70	2 10	2 50	3 00	3 40

8250—Ditto, of tinned iron, **shallow**.

Diameter	7.5	9	10	11	12.5	15	18	20	23	25 cm.
Each.....	\$0 04	05	05	06	07	08	09	10	12	15
Per doz.	25	30	40	50	60	70	80	90	1 00	1 50

8254—Ditto, **sheet iron**, 23x23 cm. square

\*8255—Ditto, **sheet iron**, on four movable legs, 23x23 cm.

\$ 1 35

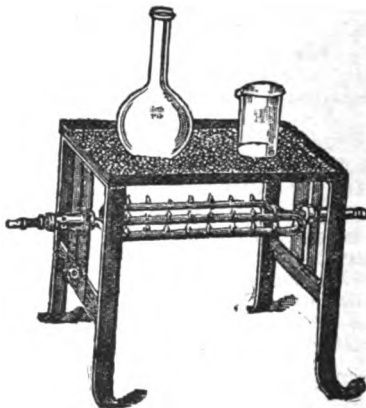
1 65



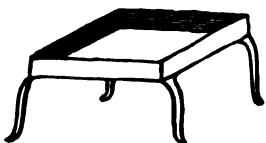
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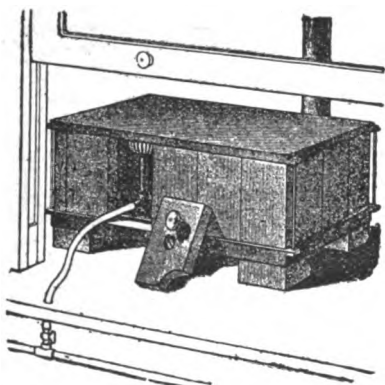
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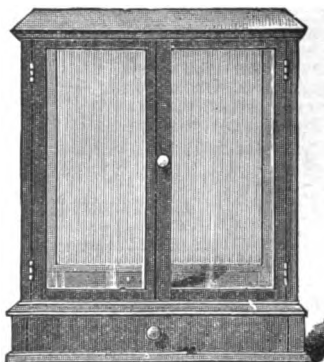
8257



8255 &amp; 8256



8258



8285

\*8256—**Sand Bath**, sheet iron, 23x35 cm., with double bottom.....

\*8257—Ditto, sheet iron, according to Ruedorf, with three rows of burners.

25x15 cm.

40x20 cm.

50x25 cm.

Each \$10 00

12 00

16 50

\*8258—**Sand Bath** or Hot Plate, called "Blair's Iron Plate," for use in iron analysis. An iron plate, supported by fire bricks.....

8260—**Sand Glasses**. See Catalogue of Physical Apparatus.

8270—**Sand Paper**; sheet \$0 05; quire.....

**Saw for cutting charcoal**. See No. 4040.

\*8280—**Scale**, of Ivory, Plattner's, for measuring assay buttons.....

\*8285—**Scale Case**, walnut frame, with double door and drawer; bottom of case is of polished mahogany, which is better than glass or marble. Inside measure, 35x35x17 cm.....

4 50

37 50

40

4 00

12 50

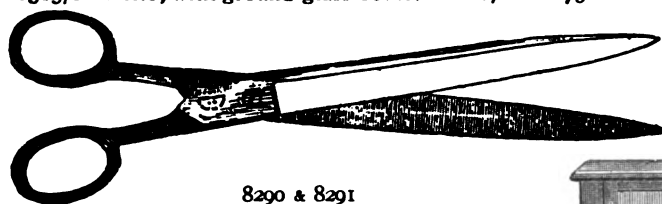
B	h	D
50	122.5	
49	115.3	
48	108.4	
47	101.7	
46	95.4	
45	89.2	
44	83.5	
43	77.9	
42	72.6	
41	67.5	
40	62.7	
39	58.1	
38	53.6	
37	49.6	
36	45.7	
35	41.8	
34	38.5	
33	35.2	
32	32.1	
31	29.2	
30	26.5	
29	23.9	
28	21.5	
27	19.2	
26	17.2	
25	15.3	
24	13.5	
23	11.9	
22	10.4	
21	9.1	
20	7.8	
19	6.7	
18	5.7	
17	4.8	
16	4.0	
15	3.3	
14	2.7	
13	2.1	
12	1.7	
11	1.3	
10	0.98	
9	0.71	
8	0.58	
7	0.48	
6	0.41	
5	0.32	
4	0.26	
3	0.22	
2	0.18	
1	0.15	
0	0	

8280

REMEMBER OUR DISCOUNT.



- \*8286—Scale Case, elegant case of polished mahogany; counterpoised door sliding upward. Inside measure, 42 cm. wide, 33 cm. high, 14.5 cm. deep. \$ 18 00
- \*8290—Scissors, of best steel, med. lge. extra lge.  
\$0 85 1 00 1 25
- \*8291—Scissors, cast; good scissors for ordinary use, 18 cm. long; per doz. \$1 75; each ..... 16
- Scissors for microscopic use. See No. 7077/252, etc.
- \*8300—Scoops, of horn. small medium large  
No. 1 2 3  
Each \$0 15 0 20 0 25
- 8310—Scoops, of tinned iron, No. 12 14 16 3 4 5  
Length of scoop proper }  
without handle..... } 10 12.5 15 20 23 26.5 cm.  
Width..... 7 9 10 12.5 14.5 16.5 cm.  
Each \$0 20 25 30 50 60 75
- 8311—Scoops, of copper, for filling charges in crucibles. med. lge.  
Each, \$1 20 1 60
- \*8312—Scoops, iron, granite enameled, 12.5x7.5 15x9 18x10 cm.  
Each \$0 35 38 45  
Per doz. \$3 25 3 75 4 50
- \*8315—Scoops, Weighing, of glass, Dr. Praussnitz', for weighing solids and liquids. Capacity 10 20 30 cc.  
\$0 40 47 53  
67 73 80
- 8315/1—Ditto, with ground glass cover. 67 73 80



8290 &amp; 8291



8300



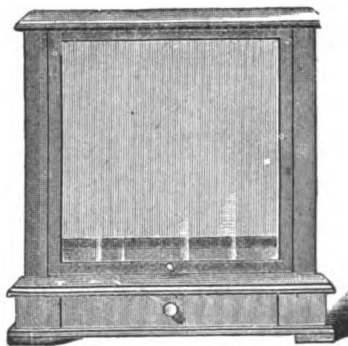
8315



8312



8320



8286

- \*8320—Scorifiers, Battersea. They are the best Scorifiers made.  
Original casks contain about 4500 3600 2700 2200 1600 1000 650 450  
Diameter in mm. .... 51 57 64 70 77 89 102 127 mm.  
Diameter in inches..... 2 2 3/4 2 1/2 2 3/4 3 3 1/2 4 5 inches.  
Each..... \$0 04 04 04 04 05 05 07 09  
Per doz..... 24 24 27 34 40 49 60 75  
Per 100..... 1 75 1 75 1 95 2 40 3 00 3 60 4 50 5 55  
By original casks, }  
per 100..... } 1 55 1 55 1 73 2 13 2 67 3 20 4 00 4 93

Casks charged extra!

- 8321—Scorifiers, Battersea, Bartlett style, shallow bowl.

Original casks contain .....	3600	2700	2200	1600
Diameter in mm.....	57	64	70	77 mm.
Diameter in inches.....	2 3/4	2 1/2	2 3/4	3 inches.
Each.....	\$0 04	04	04	05
Per doz.....	24	27	34	40
Per 100.....	1 75	1 95	2 40	3 00
By original casks, per } 100..... }	1 55	1 73	2 13	2 67

Casks charged extra!

APPROXIMATE EQUIVALENTS!  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**8330—Scorifiers, Freiberg, hand-made, of superior quality.**

Original casks contain about	4000	3500	3200	2000	1500
Diameter in mm. ....	51	57	63	70	82½ mm.
Diameter in inches .....	2	2¼	2½	2¾	3¼ inches.
Each .....	\$0 03	04	04	05	08
Per doz. ....	29	29	31	50	80
Per 100 .....	2 05	2 05	2 20	3 55	5 50
By original casks, per } 100. ....	1 75	1 75	1 90	3 00	4 75

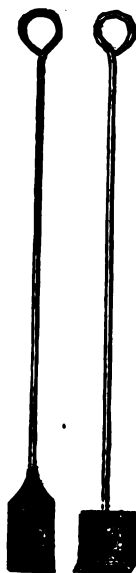
**Casks charged extra!**

\*8340—Scrapers, of steel, for cleaning muffles, small lge.  
\$0 50 65

\*8341—Scrapers, of horn, for ointment, 10 cm. long; per doz. \$3 00; each \$0 30

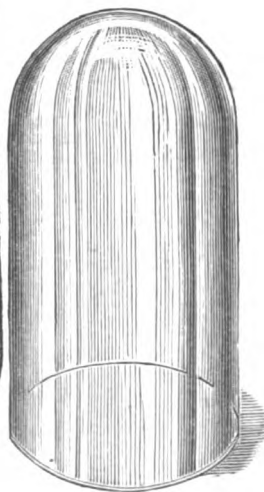
\*8342—Shades of light glass, round, for covering microscopes, specimens, etc.

No.	13	18	23	33	41	48	58	63	73	78
Height	10	15	20	30	39	46	56	61	71	76 cm.
Diameter	7.5	10	12.5	18	21.5	25	30	33	38	40 cm.
Each	\$0 45	45	72	1 90	2 60	3 85	6 55	9 45	20 25	24 75

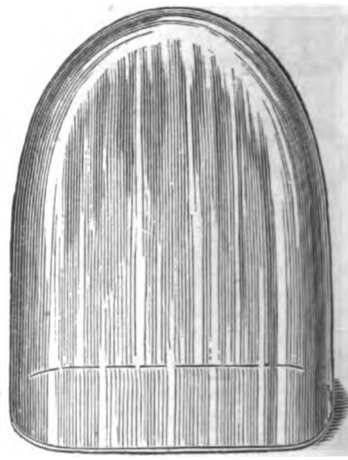
**By the dozen, 10 per cent cheaper.****REMEMBER OUR DISCOUNT.**

8340

8341



8342



8343

\*8342/1—Shade-Stands, for above. (Illustr. p. 385.)

Of black polished wood,  
\$0 04 per cm. diameter.

Of polished black walnut  
\$0 07 per cm. diameter.

\*8343—Shades of light glass, oval

No.	31	49	63	81
Height	24	40	54	71 cm.
Length	19	30	39	50 cm.
Width	9	15	19	25 cm.
Each	\$2 40	5 65	13 20	40 00

**By the dozen, 10 per cent cheaper.**

8343/1—Shade-Stands above.

Of black polished wood,  
\$0 07 per cm. length.

Of polished black walnut,  
\$0 10 per cm. length.

\*8344—Shades of light glass, square. (Illustr. p. 385.)

No.	34	48	61	74½
Height	26	42	53	65 cm.
Length	17	25	33	42 cm.
Width	11	16.5	23	28 cm.
Each	\$2 75	5 40	12 00	30 20

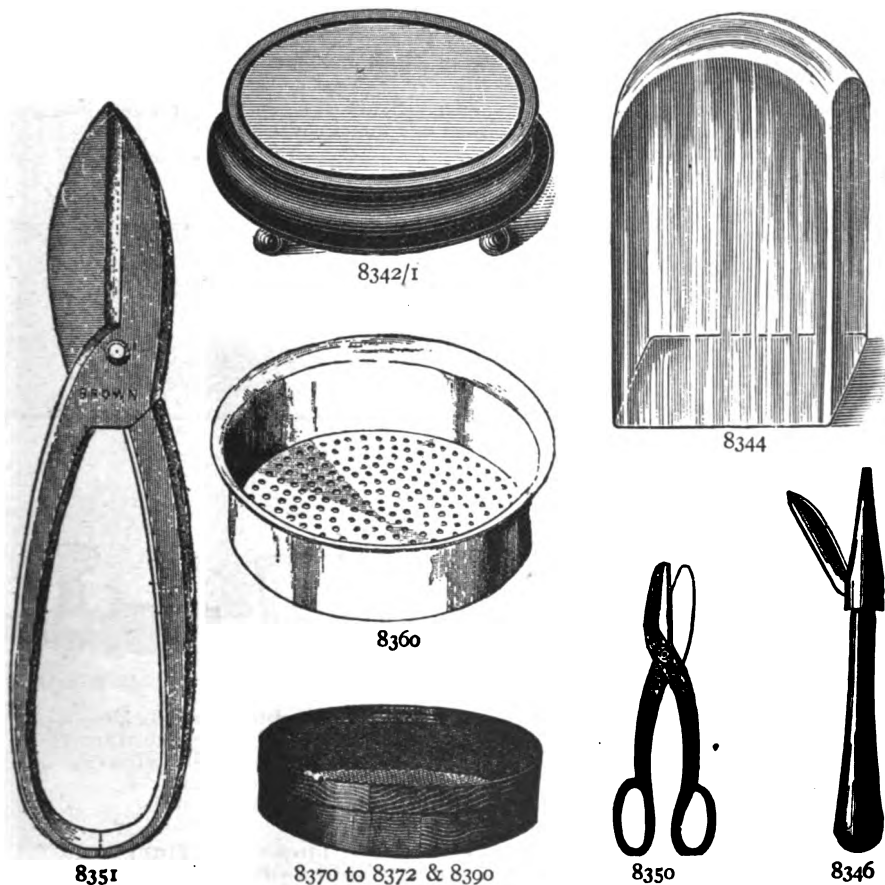
**By the dozen, 10 per cent cheaper.**

8344/1—**Shade Stands**, for above.Of polished black wood,  
\$0 07 per cm. length.Of polished black walnut,  
\$0 10 per cm. length.\*8346—**Sharpener**, for cork borers, each..... \$ 1 25\*8350—**Shears**, of the best English Steel, for cutting metal, etc.

	25	32	35.5	40 5 cm.
Each	\$2 00	3 00	3 40	3 75

\*8351—**Shears**, Brown's Snip Shears, bright polished steel.

	15	18	20	25 cm.
Each	\$1 35	1 60	1 85	2 10

**Sheet, Platinum.** See No. 5365.\*8360—**Sieve**, for test-lead, for blow-pipe use..... 1 25

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

\*8370—**Sieves**, of Standard brass wire gauze, with wooden frame, 17.8 cm. diameter.

	10	20	30	40	50	60	70	80	90	100	{ Meshes to the linear inch.
= 4	8	12	16	20	24	28	32	36	40		
Each	\$0 75	75	80	80	85	85	1 00	1 10	1 15	1 20	{ Meshes to the linear cm.
Per doz.	8 10	8 10	8 65	8 65	9 20	9 20	10 80	11 90	12 40	13 00	

\*8370/1—**Ditto**, ditto, ditto, 20 cm. diameter.

	10	20	30	40	50	60	70	80	90	100	{ Meshes to the linear inch.
= 4	8	12	16	20	24	28	32	36	40		
Each	\$0 80	80	85	90	95	95	1 10	1 20	1 30	1 35	{ Meshes to the linear cm.
Per doz.	8 65	8 65	9 20	9 70	10 30	10 30	11 90	13 00	14 00	14 60	

\*8371—Sieves, of Standard brass wire gauze, with wooden frame, 25 cm. diameter. (Illustr. p. 385.)

	10	20	30	40	50	60	70	80	90	100	
											{ Meshes to the linear inch.
—	4	8	12	16	20	24	28	32	36	40	{ Meshes to the linear cm.
Each	\$1 05	1 05	1 15	1 20	1 30	1 35	1 60	1 80	2 00	2 10	
Per doz.	11 35	11 35	12 40	13 00	14 00	14 60	17 30	19 45	21 60	22 70	

\*8372—Ditto, ditto, ditto, 30 cm. diameter. (Illustr. p. 385.)

	10	20	30	40	50	60	70	80	90	100	
											{ Meshes to the linear inch.
—	4	8	12	16	20	24	28	32	36	40	{ Meshes to the linear cm.
Each	\$1 20	1 20	1 40	1 50	1 55	1 60	2 30	2 40	2 75	2 90	
Per doz.	13 00	13 00	15 10	16 20	16 75	17 30	24 85	26 00	29 70	31 30	

\*8378—Ditto, ditto, metal frame, 12.7 cm. diameter. Set of five sieves, 20, 40, 60, 80, 100 meshes to the linear in., with one metal cover and one tin bottom; per set.....

\$ 7 00

\*8379—Ditto, ditto, ditto, 20 cm. diameter. Set of five sieves, 20, 40, 60, 80, 100 meshes to the linear in., with one metal cover and one tin bottom; per set.....

10 00

REMEMBER OUR DISCOUNT.



8378 &amp; 8379



8415



8420 &amp; 8430



8380 &amp; 8381



8440



8451 &amp; 8452

\*8380—Ditto, ditto, with tin frame, with extra tin bottom (box sieve), according to Prof. Ricketts, 20 cm. diameter. These are finer and deeper sieves than those usually sold as box sieves.

20	40	60	80	100	meshes to the linear inch.
= 8	16	24	32	40	meshes to the linear cm.
\$2 00	2 10	2 20	2 35	2 65	

\*8381—Ditto, ditto, ditto, ditto, 25 cm. diameter. These are finer and deeper sieves than those usually sold as box-sieves.

20	40	60	80	100	meshes to the linear inch.
= 8	16	24	32	40	meshes to the linear cm.
\$3 00	3 10	3 20	3 50	4 00	

\*8390—Sieves, of iron wire gauze, with wooden frame. (Illustr. p. 385.)

	6	10	14	18	20	meshes to the linear inch.
Diameter 30 cm.	\$0 50	55	60	65	75	
Diameter 38 cm.	80	90	95	1 00	1 15	
Diameter 45 cm.	90	95	1 00	1 10	1 30	
Diameter 50 cm.	1 10	1 15	1 20	1 25	1 50	

8395—Ditto, of bolting cloth; see fig. 8370-72 & 8390. 12.7 15 20 cm. diameter.

\$1 10 1 20 1 40

I 8396—Sieves, according to Nobbe, for seeds, 100 mm. diameter, 250 mm. high, with round holes of  $\frac{1}{2}$ , 1 and 2 mm. diameter.

Per set of three sieves.....

50 00

8397—Sieves, 10 cm. diameter, with circular perforations  $\frac{1}{2}$ , 1 and 2 mm. diameter, in brass frames with brass cover. Per set of three.....

7 50

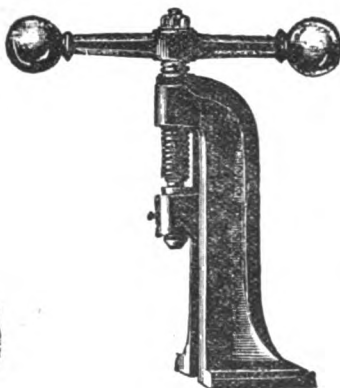
8400—Silk Cord, green, for hand scales; per meter.....	\$ 0 15
*I 8415—Skittle Pots, of clay, Battersea. They are particularly well suited for all refining purposes; the contracted form prevents the ebullition of the fluxes. (Illustr. p. 386.)	
Height in mm.	77 102 127 153 178 203 229 254 280 305 356 mm.
Height in inches	3 4 5 6 7 8 9 10 11 12 14 inch.
Each	\$0 14 19 24 28 33 42 57 71 85 1 13 1 70
Per doz.	1 28 1 71 2 14 2 57 2 99 3 85 5 13 6 41 7 70 10 26 15 39
Per 100	8 55 11 40 14 25 17 10 19 95 25 65 34 20 42 75 51 30 68 40 102 60
Height in mm.	406 458 508 mm.
Height in inches	16 18 20 inch.
Each	\$2 25 3 95 5 65
Per doz.	20 52 35 90 51 30
Per 100	136 80 239 40 342 00

## Casks for No. 8415 charged extra!

I 8416—Skittle Pot Covers, for Skittle Pots No. 8415.	
for 77-102-127-153-178 203-229-254 280 305-356 406 458-508 mm. sizes.	
Per 100 \$3 00	4 50 6 00 7 50 9 00 12 00
Per doz. 45	68 90 1 13 1 35 1 80
Each 05	07 09 12 14 18
*8420—Slides, of crown glass, for microscopes, unground edges, 75x25 mm.; (Illustr. p. 386); per doz., 15 cts.; per gross.....	1 00
*8430—Ditto, ditto, ditto, ground edges, 75x25 mm. (Illustr. p. 386); per doz., 16 cts.; per gross.....	1 40
*8440—Ditto, ditto, ditto, with concave centres, for examination of liquids, 75x25 mm. (Illustr. p. 386); each, 8 cts.; per doz.....	75



8453



8453/1

8460  
8465  
8516

8462

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=1800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

8450—Sockets, of brass, for gas bags, etc.; to fit stop-cocks Nos. 8451, 8452 and 8453. Diameter	13 16 19 22 25 29 32 mm.
	\$0 40 45 50 55 65 75 90
*8451—Ditto, ditto, with stop-cock No. 8651. (Illustr. p. 386.) According to size of socket, from \$1 27 to .....	1 77
*8452—Ditto, ditto, with stop-cock No. 8651/1. (Illustr. p. 386.) According to size of socket, from \$1 55 to .....	2 05
*8453—Sodium Press, with moulds for ¼, ½, 1 and 2 mm. wire .....	28 00
*8453/1—Ditto, larger and stronger, with 1 cylinder, 15 mm. inside diameter with a bored hole of ½ mm. ....	60 00
8453/10—Soldering Coppers. See Catalogue of Physical Apparatus.	
Sounders, electric. See Catalogue of Physical Apparatus No. 6594 & 6594/1.	
I 8459—Spatulas of Aluminium;	
Length	10 12 15 20 21 cm.
Each	\$0 32 40 48 60 66
*8460—Spatulas, of bone.	
Each	15 cm. 17 cm. long.
	\$0 21 25
Per doz.	2 20 2 50
*8462—Spatulas, of glass, 15 cm. long, ground; each .....	25

\*8465—Spatulas, of horn, German, best quality. (Illustr. p. 387.)

	10	12	14	15	16	18	20	22	24	30 cm.
Each	\$0 10	12½	14	15	17	19	25	31	44	65

\*8470—Ditto, of polished iron, double.

	10	13	16	20	25	30 cm. long.
Each	\$0 21	23	25	31	44	56

\*8475—Spatulas, of pure wrought nickel, double.

	12	15	18	21 cm.
Each	\$0 65	80	98	1 30

\*8480—Ditto, of best steel, with riveted wooden handles.

Length of blade	7.5	10	12.7	15	18	20	23	25	30 cm.
Each	\$0 30	33	38	47	61	75	1 00	1 32	2 15
Per doz.	3 40	3 75	4 30	5 40	7 00	8 55	11 30	13 80	24 50

\*8485—Spatulas, all steel, nickel-plated, highly finished.

Length of blade	7.5	10	12.7	15 cm.
Each	\$0 50	55	75	1 20

\*8490—Ditto, of platinum, 5 to 10 cm. long; approximate weight, 4 to 8 grammes. At lowest market price.

8495—Ditto, ditto, in wooden handle,	small	large
Approximate weight	5 grammes.	7.5 grammes.
Platinum at lowest market price,		
with an additional charge for		
making each spatula of	\$1 00	1 10

*8500—Ditto, ditto, folding,	small	med.	large
Approximate weight	9 grms.	14 grms.	18 grms.
Platinum at lowest market price,			
with an additional charge for			
making each spatula of	\$1 20	1 50	1 75

REMEMBER OUR DISCOUNT.



8470 & 8475



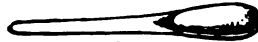
8480



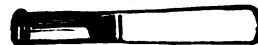
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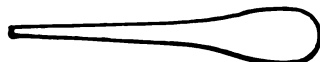
8500



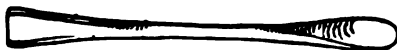
8505



8515



8490



8510



8519

8501—Spatula, of platinum, or Platinum Rod, fused in glass handle; from \$2 50 to \$6 00, according to weight. At lowest market price.

*8505—Ditto, of Meissen porcelain, with handle.	14	21 cm. long.
Each	\$0 40	50

*8510—Ditto, ditto, double.	22	33 cm. long.
Each	\$0 54	81 95

*8515—Ditto, of Berlin porcelain, with handle and broad blade, very stout.	29	34	39	44.5	47 cm. long.
Each	\$0 85	1 15	1 40	2 00	2 50

*8516—Ditto, of Berlin porcelain, spatula at each end.	39	44 cm. long.
(Illustr. p. 387.) Each	\$1 35	1 80

\*8519—Spectroscope, Direct Vision Pocket. Will show many of the Fraunhofer's lines, and the bright lines of the metals and gases, with adjustable slit, in neat morocco case. \$ 17 00

\*8520/1—Spectroscope, Direct Vision, Franz Schmidt & Haensch's fig. 2 and 3, to carry in the pocket, mounted in a brass tube; with adjustable slit. (Illustr. p. 389) 20 25

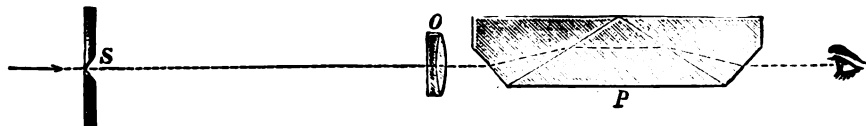
Imported to order duty-free 14 05

- \*I 8520/2—Spectroscope, Direct Vision, Franz Schmidt & Haensch's fig. 4 and 5, with comparison prism and illuminating mirror, according to H. W. Vogel..... \$ 28 75

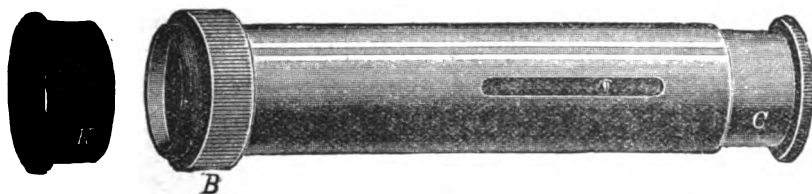
Imported to order duty-free..... 20 30

- \*I 8520/3—Ditto, ditto, Franz Schmidt & Haensch's fig. 1, consisting of tube with slit, lens and cap, draw-tube with flint prism, draw-tube with direct vision prism, cap with transversal opening to receive the glass-tubes; glass-tubes and a simple support, on which the spectroscope can be rotated around its horizontal axis. The illustration does not show the support..... 33 75

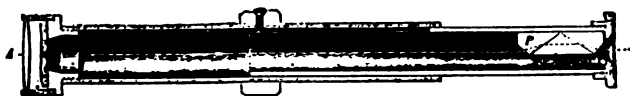
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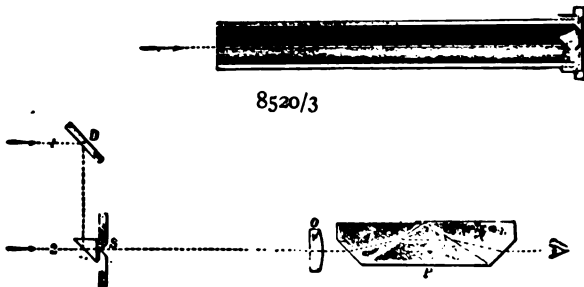
8520/1



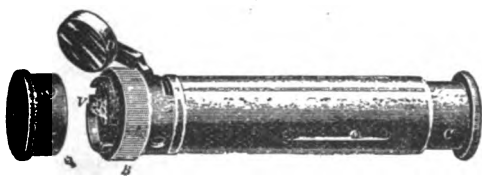
8520/1



8520/3



8520/2



8520/2

- I 8522—Spectroscope, Pocket, with Scale, Comparison Prism and Illuminating Mirror, Franz Schmidt & Haensch's fig. 7; with case..... 60 00

Imported to order duty-free..... 41 60

- \*I 8524—Spectroscope, Direct Vision, Franz Schmidt & Haensch's fig. 42, according to Hoffmann, with slit and comparison prism, 2 eyepieces with cross-hair and direct vision prism, but without scale telescope. (Illustr. p. 390.)..... 153 75

Imported to order duty-free..... 106 60

- \*I 8524/1—Ditto, ditto, with scale telescope, wave-length-scale and illuminating mirror for the scale. (Illustr. p. 390.)..... 183 75

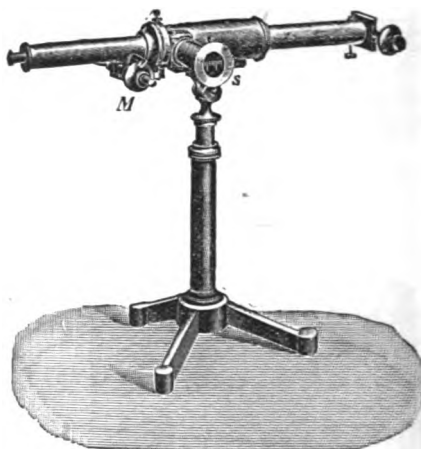
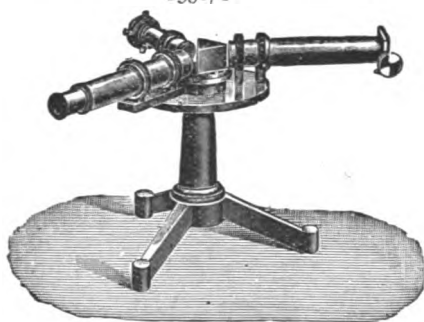
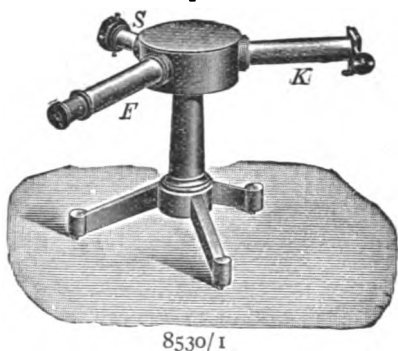
Imported to order duty-free..... 127 40

APPROXIMATE EQUIVALENTS:

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

*I 8524/2—Spectroscope, Direct Vision, Franz Schmidt & Haensch's fig. 42, with scale telescope, wave-length-scale and illuminating mirror for the scale; also with a second slit.....	\$ 206 25
<b>Imported to order duty-free</b> .....	143 00
I 8524/3—Nos. 8524, 8524/1 and 8524/2, if furnished with two supports for tubes, 12 tubes, one adjustable support shown in illustration Nos. 8534/1 and 2, one absorption trough and two small Bunsen Burners, cost each <b>additionally</b> .....	17 25
<b>Imported to order duty-free</b> .....	11 95
I 8524/4—Nos. 8524, 8524/1 and 8524/2, if furnished with small Auer Lamp No. 58f, cost each <b>additionally</b> .....	15 75
<b>Imported to order duty-free</b> .....	10 95
*8530/1—Spectroscope, Franz Schmidt & Haensch's fig. 38, according to Kirchhoff-Bunsen, with fixed observation tube, collimator with slit and comparison prism, scale collimator, eye-piece without cross-hair, and flint prism.....	78 75
<b>Imported to order duty-free</b> .....	54 60
*8533/1—Spectroscope, Franz Schmidt & Haensch's fig. 39, according to Kirchhoff-Bunsen, with movable observation telescope, collimator with slit and comparison prism, scale collimator, 2 eye-pieces without cross-hair, equilateral flint prism and protecting cover for the prism....	114 00
<b>Imported to order duty-free</b> .....	79 05

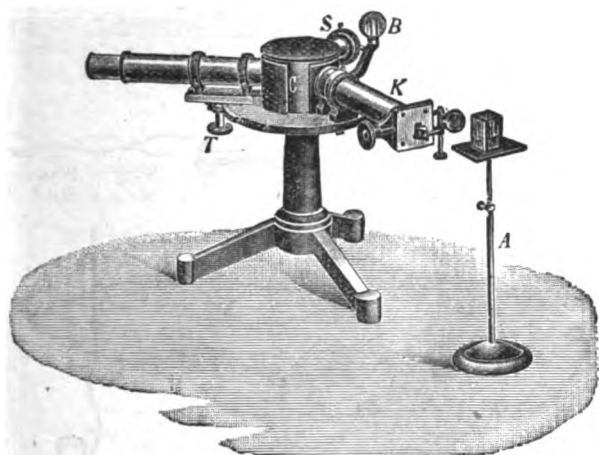
REMEMBER OUR DISCOUNT.



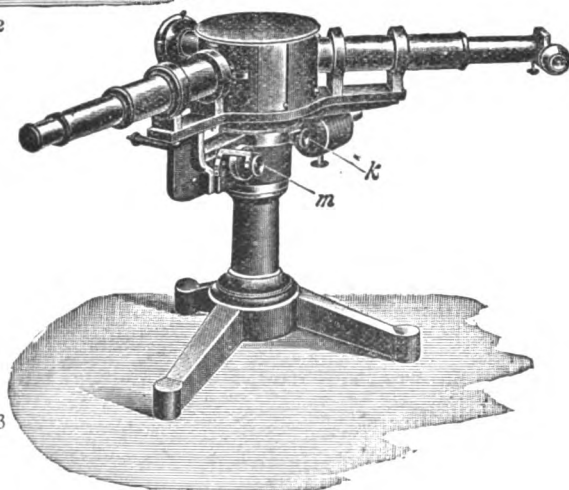
*I 8533/2—Ditto, ditto, same as No. 8533/1, but provided with a Rutherford prism instead of an equilateral flint prism.....	129 00
<b>Imported to order duty-free</b> .....	89 45
I 8533/3—No. 8533/1 and 8533/2, if furnished with two supports for tubes, 12 tubes, one adjustable support shown in illustration No. 8534/1 and 2, one absorption trough and two small Bunsen Burners, cost each <b>additionally</b> .....	14 25
<b>Imported to order duty-free</b> .....	9 90
*8534/1—Spectroscope, Franz Schmidt & Haensch's fig. 40, according to Kirchhoff-Bunsen, with movable observation telescope, collimator with slit with comparison prism and illuminating mirror, scale collimator, illuminating mirror for the scale, two eye-pieces without cross-hair, equilateral flint prism and stationary protecting cover for the prism. (Illustr. p. 391.).....	144 75
<b>Imported to order duty-free</b> .....	100 35
*I 8534/2—Ditto, ditto, same as No. 8534/1, but provided with a Rutherford prism instead of an equilateral prism. (Illustr. p. 391.).....	159 75
<b>Imported to order duty-free</b> .....	110 75



I 8534/3—No. 8534/1 and 8534/2, if furnished with two supports for tubes, 12 tubes, one adjustable support shown in the illustration, one absorption trough and two small Bunsen Burners, cost each <b>additionally</b> .....	\$ 13 75
<b>Imported to order duty-free</b> .....	9 90
*I 8535/1—Spectroscope, Franz Schmidt & Haensch's large Spectroscope according to Kirchhoff-Bunsen fig. 41, with observation telescope, telescope with slit and comparison prism, scale telescope with wave-length-scale, eye-piece with cross-hair and flint prism. If desired a dispersion-curve is furnished .....	237 25
<b>Imported to order duty-free</b> .....	171 55
8535/2—No. 8535/1, if furnished with Rutherford prism in place of flint prism, costs <b>additionally</b> .....	17 55
<b>Imported to order duty-free</b> .....	12 70



8534/1 &amp; 2



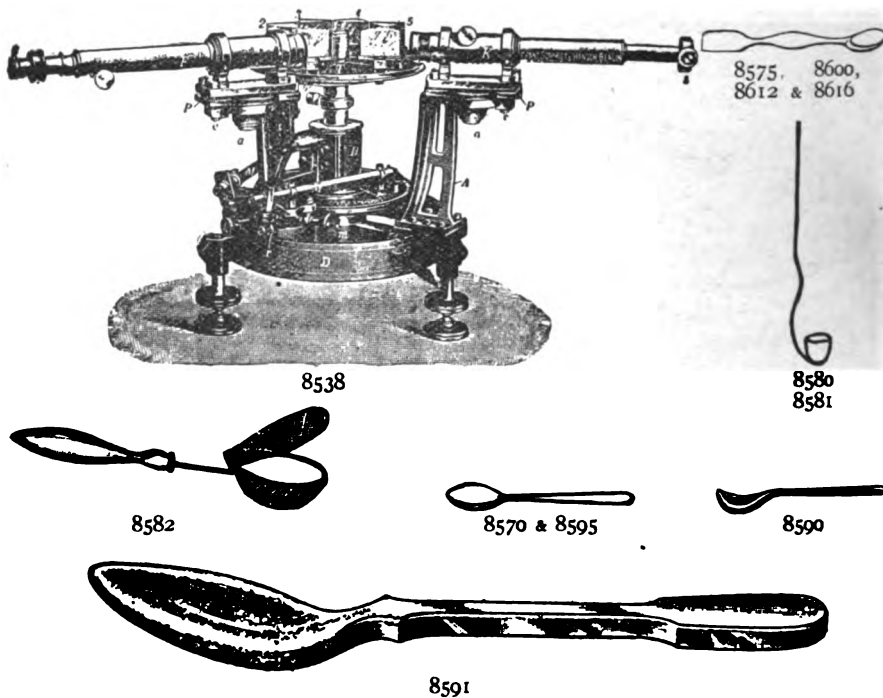
8535/1 &amp; 3

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

*I 8535/3—Ditto, ditto, with observation telescope, telescope with slit, comparison prism and illuminating mirror, scale telescope with wave-length-scale, illuminating mirror for the scale, two eye-pieces with cross-hair and Rutherford prism. If desired a dispersion-curve is furnished.....	276 60
<b>Imported to order duty-free</b> .....	200 00
I 8535/4—Nos. 8535/1, 2 and 3, if furnished with two supports for tubes, 12 tubes, one adjustable support shown in illustration No. 8534/1 and 2, one absorption trough and two small Bunsen Burners, cost each <b>additionally</b> .....	14 95
<b>Imported to order duty-free</b> .....	10 80
I 8535/5—No. 8535/1, 2 and 3, if furnished with Plane Mirror No. 61a, Autocolimation-Slit No. 29 and small Auer Lamp No. 58f, cost each <b>additionally</b> .....	62 75
<b>Imported to order duty-free</b> .....	45 35

- \*I 8538—Spectroscope, Franz Schmidt & Haensch's large Precision Spectrometer fig. 43, with six flint prisms with automatic motion.....\$2041 00  
**Imported to order duty-free** ..... 1475 80  
 I 8538/1—Ditto, ditto, same as No. 8538, but provided with 3 Rutherford prisms with automatic motion in place of six flint prisms..... 2041 00  
**Imported to order duty-free** ..... 1475 80  
 I 8538/2—Nos. 8538 and 8538/1, if furnished with the Plane Mirror No. 61c, Autocollimation-Slit No. 29 and two Spectrometer Table-supports, adjustable according to Wanschaff, revolving and adjustable as to height. Diameter 145 and 80 mm.; extra..... 141 40  
**Imported to order duty-free** ..... 102 25  
 8542—Spectroscope Accessories. Cells with parallel sides, for liquids, to show absorption spectra ..... 5 00  
 8543—Ditto, ditto, the same for volatile liquids..... 5 85  
**Spectroscopic Bottles.** See No. 3455.  
 8550—Spiral, of platinum, hollow, for the determination of hydrogen. At lowest market price.

REMEMBER OUR DISCOUNT.



8560—Sponges, selected, for laboratory use.

	small.	medium.
Per Hecto.....	\$1 20	1 25
Per Kilo.....	8 80	9 15

Sponges, of platinum. See No. 7740.

\*8570—Spoons, of bone, best German make, polished.

	8	10	12	15 cm. long.
Each.....	\$0 15	17	19	25

\*8575—Ditto, ditto, ditto, with spatula handle.

	8	10	12	15 cm. long.
Each.....	\$0 16	18	20	30

\*8580—Spoons, for deflagrations, brass, small,

each	spoon 13 mm.	25 mm. diam.
.....	\$0 22	25

\*8581—Ditto, ditto, of iron, heavy; each..... 18 20

\*8582—Ditto, of brass wire gauze, for decomposing water by sodium..... 65

\*8590—Ditto, of glass, light.

Teaspoon. Tablespoon.

	\$0 25	50
.....	37½	45

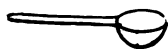
\*8591—Ditto, of heavy cut glass.

Each	Teaspoon.	Dessertspoon.	Tablespoon.
.....	\$0 37½	45	67½

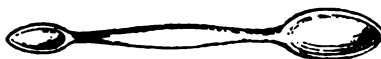
- \*8595—Spoons, of horn, best German make. (Illustr. p. 392.)
- |           |        |     |    |    |    |    |              |
|-----------|--------|-----|----|----|----|----|--------------|
|           | 10     | 12  | 15 | 17 | 20 | 24 | 30 cm. long. |
| Each..... | \$0 10 | 12½ | 15 | 19 | 25 | 44 | 69           |
- \*8600—Ditto, ditto, ditto, with spatula handle. (Illustr. p. 392.)
- |           |        |    |    |    |    |    |              |
|-----------|--------|----|----|----|----|----|--------------|
|           | 10     | 12 | 15 | 17 | 20 | 26 | 30 cm. long. |
| Each..... | \$0 13 | 15 | 19 | 25 | 33 | 55 | 85           |
- \*8605—Ditto, ditto, ditto, a spoon at both ends.
- |  |        |    |    |        |
|--|--------|----|----|--------|
|  | 13     | 15 | 17 | 20 cm. |
|  | \$0 20 | 25 | 31 | 48     |
- \*8610—Ditto, ivory, for blow-pipe use ..... \$ 0 30
- \*8612—Spoons, of pure wrought nickel, with spatula handle. (Illustr. p. 392.)
- |           |        |    |      |              |
|-----------|--------|----|------|--------------|
|           | 12     | 15 | 18   | 21 cm. long. |
| Each..... | \$0 65 | 85 | 1 11 | 1 44         |
- \*8613—Spoons, of pure wrought nickel, spoon at both ends.
- |           |        |    |    |              |
|-----------|--------|----|----|--------------|
|           | 12     | 15 | 18 | 21 cm. long. |
| Each..... | \$0 65 | 82 | 98 | 1 30         |



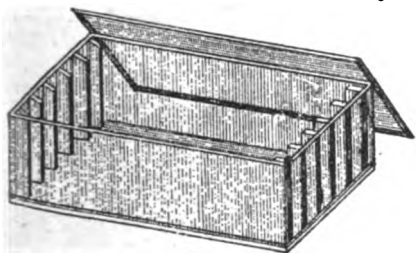
8610



8615



8605 &amp; 8613



8622



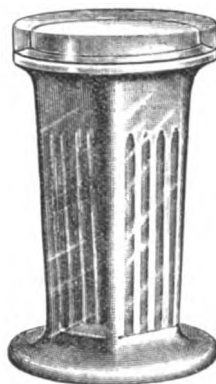
8641



8620



8619



8621

CROSS-SECTION  
SHOWING SLIDES  
IN POSITION.

APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=90 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

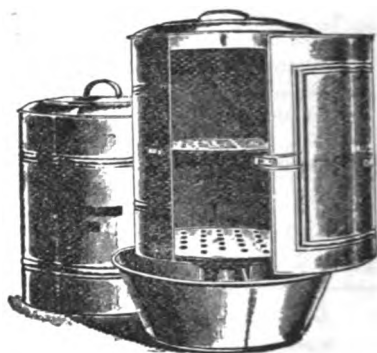
- \*8615—Spoons, of platinum, for blow-pipe use.
- |                         |      |      |      |            |
|-------------------------|------|------|------|------------|
| Diameter of cup.....    | 9    | 12.5 | 16   | 19 mm.     |
| Approximate weight..... | 1.25 | 1.9  | 2.75 | 3.75 grms. |
- Platinum at lowest market price, with an additional charge for making same; for each spoon..... \$0 40 45 50 55
- \*8616—Spoons, of Berlin porcelain, with spatula handle (Illustr. p. 392.)
- |           |        |    |    |    |              |
|-----------|--------|----|----|----|--------------|
|           | 14.5   | 16 | 20 | 22 | 28 cm. long. |
| Each..... | \$0 29 | 31 | 50 | 55 | 95           |
- \*8619—Ditto, of Berlin porcelain, small..... 30
- \*8620—Ditto, of Berlin porcelain, large..... 50
- \*8621—Staining Jar, Coplin's, with glass lid, ground on shoulder; for use in staining sections for microscopic work; for 10 slides..... 67
- \*8622—Staining Vessels, made with cement resisting acids, alkalis and heat; for immersing microscopic slides.
- |           |         |      |                 |
|-----------|---------|------|-----------------|
| With..... | 4       | 5    | 6 compartments. |
| Each..... | \$ 4 50 | 5 00 | 5 60            |
- 8623—Steel, Standard; per hecto ..... 3 65
- \*8641—Steam Boilers, of heavy copper, globe shape, with pressure gauge, etc., 10 liters capacity, as used for Hoffman's apparatus..... 100 00
- Stender Dishes. See No. 4999.

\*8644—Sterilizers, Common Sense, H. H. Ch. Co.'s, for sterilizing milk, drinking water, cereal food for children, etc. Including 8 Nursing Bottles of well annealed glass with neck of proper size for an ordinary nipple, 8 French Rubber Stoppers with air-hole, and a Cleaning Brush. Complete as per illustration.....

\$ 3 30



8644

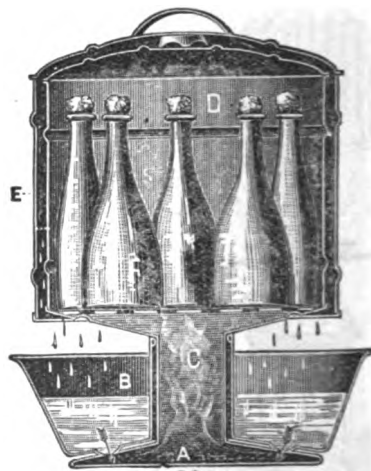


8645/1

REMEMBER OUR DISCOUNT.



8645



8645

\*8645—Sterilizers, Arnold's, for sterilizing milk, drinking water, cereal food for children, surgical dressings, instruments, etc., and for bacteriological investigations.

**No. 22—Family size, holding 9 ordinary nursing bottles.** Height 18.4 cm., diameter 21.6 cm. **Heavy tin, copper bottom.** **All copper.**

No. 23—Height 25.7 cm., diameter 23.8 cm.	5 80	18 30
No. 24—Height 29.2 cm., diameter 26.7 cm.	7 05	21 65
No. 25—Height 31.7 cm., diameter 28.6 cm.	7 90	23 30

\* Size No. 22 is always furnished with rack for 8 bottles AT AN ADDITIONAL COST OF 50 CTS., unless specified "WITHOUT RACK."

Bottles for above Sterilizers No. 2. See No. 3457.

Soft Rubber Stoppers for same, with one perforation and glass rod for closing the bottles after sterilization. Per doz. ....

1 25

\*8645/1—Sterilizers, Arnold's, improved style, wide side door.

Height.	Diameter.	Heavy tin, copper bottom.	All copper.
No. 22 1/2 18.4 cm.	21.6 cm.	\$5 40	15 00
No. 23 1/2 25.7 cm.	23.8 cm.	6 65	19 15
No. 24 1/2 29.2 cm.	26.7 cm.	7 90	22 90
No. 25 1/2 31.7 cm.	28.6 cm.	8 75	23 75

**\*8645/2—Sterilizers, Arnold's, oval style, fitted with two racks for instruments.**

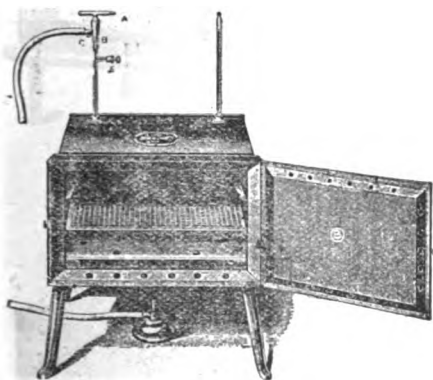
	Length.	Width.	Height.	Heavy tin, copper bottom.	All copper.
No. 44.....	35.5 cm.	23.5 cm.	15.2 cm.	\$8 30	22 05
No. 46.....	40.6 cm.	26.7 cm.	17.8 cm.	10 00	25 00
No. 48.....	45.7 cm.	30.5 cm.	20.3 cm.	16 65	37 05

**8645/3—Sterilizers, Boston Board of Health Pattern.**

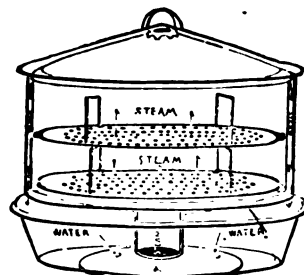
	Height.	Width.	Depth.	
No. 134.....	35.5 cm.	20.3 cm.	20 3 cm.	\$54 15
No. 135.....	40.6 cm.	30.5 cm.	30 5 cm.	62 50

**8645/4—Sterilizers, Rochester Combination, for steam, boiling water or hot air.**

	Length.	Width.	Depth.	Heavy tin, copper bottom.	All copper.
No. 104....	35.5 cm.	15.2 cm.	15.2 cm.	\$ 9 15	20 80
No. 106....	40.6 cm.	17.1 cm.	17.8 cm.	10 00	25 00
No. 108....	45.7 cm.	19. cm.	20.3 cm.	11 65	29 15
No. 107....	19. cm.	8.9 cm.	7.6 cm.	.....	10 00
No. 110....	25.4 cm.	10.9 cm.	10.9 cm.	.....	15 80
No. 122....	56. cm.	25.4 cm.	25.4 cm.	.....	58 30



8646



8645/2

**\*8646—Sterilizers, Hot Air, Physicians', for sterilizing instruments, bandages, etc., in dry heat.** It is constructed so that the heat is distributed most uniformly all over the inside of the oven. They are made of the best Russian iron, with double walls, through which the heat circulates, having a register on top. In order to secure a perfectly even circulation of the heat all around, there are connecting openings between the double doors. The heat should be produced by a powerful Bunsen Burner (No. 3821, 3822 or 3835), which is placed below the funnel-shaped opening in the center of the bottom of the oven. In order to prevent the overheating of the instruments, etc., and to secure the proper heat necessary for sterilization, there is an opening on one side in the top of the oven, for holding a gas regulator (for which we recommend No. 5812), working by the expansion or contraction of a column of mercury, which closes or opens the orifice through which the gas is supplied to the burner. The accuracy of the gas regulator is increased by surrounding the heated space with a non-conducting material. The opening on the other side of the top is intended for the insertion of a chemical thermometer, for which we recommend No. 9210—360°C.

Inside measure 22.9x22.9x30.5 cm. ....	\$ 22 90
Inside measure 22.9x22.9x38 cm. ....	23 75
Inside measure 22.9x22.9x45.7 cm. ....	25 25
Inside measure 30.5x30.5x61 cm. ....	34 10

**\*8646/1—Sterilizers, Hot Air, same as No. 8646, but of an upright pattern, with ears to hang up and support for burner. Inside measurement 30.5 cm high, 22.9 cm wide and 22.9 cm. deep. (Illustr. p. 396.)**

27 75

**\*8646/2—Ditto, ditto, same as No. 8646/1, but covered with asbestos. (Illustr. p. 396.)**

37 00

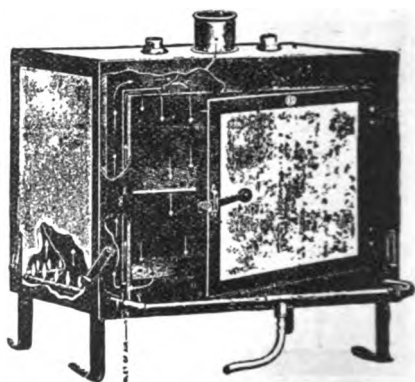
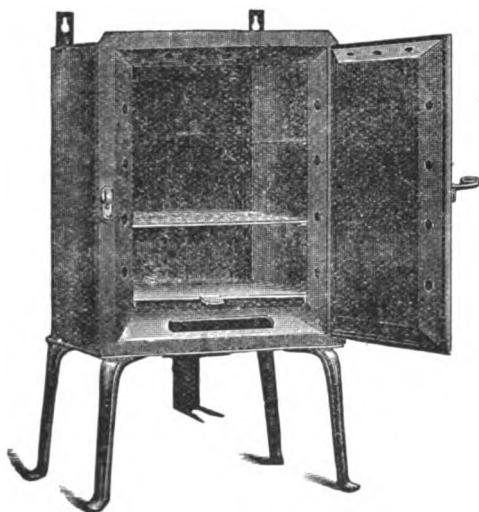
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*8646/3—Sterilizers, Hot Air, Lautenschlaeger's Pattern.** Made of Russian iron, covered with white enameled asbestos. They have the following advantages over the ordinary Hot Air Sterilizers:

The sterilization is done by circulating hot air only. The heating is not done directly from the bottom, but from the sides as indicated by arrows, thereby securing an even temperature and not liable to take the temper out of any instrument, even if laying close to the walls. Provided with tubulations for Thermometer and Gas Regulator.

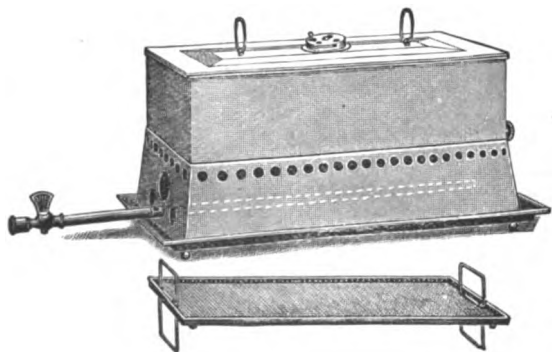
The Sterilizer can be heated to 150° Celsius in about 15 minutes.

30.5 cm. high, 45.7 cm. wide, 22.9 cm. deep.....	\$ 62 50
45.7 cm. high, 61 cm. wide, 35.5 cm. deep.....	90 00



8646/3

8646/1 &amp; 2



8646/5



8646/6

**\*8646/5—Sterilizers, Franklin,** designed for physicians and dentists for sterilizing instruments, etc. Made of polished nickel-plated copper and mounted on a base 82 mm. high, resting on a metal tray. They are heated by gas and have a valve for draining the water and a ventilator in the lid for the escape of steam. Provided with a perforated portable tray for immersing and lifting the instruments, which can also be used for sterilizing bandages in steam by turning the movable supports down, as shown on cut.

76x127x305 mm.....

114x165x380 mm.....

23 65

29 15

**\*8646/6—Sterilizer, Hot Air, large size.** It is large and roomy and has three shelves. The heating arrangement consists of a series of small Bunsen burners which distribute the heat evenly over the bottom surface. The front of the base is closed by a door. Heat radiation is prevented by a suitable covering. Made of the best material throughout. Inside dimensions: 48 cm. high, 30 cm. wide, and 24 cm. deep. Complete with thermometer, thermo-regulator and asbestos mat.....

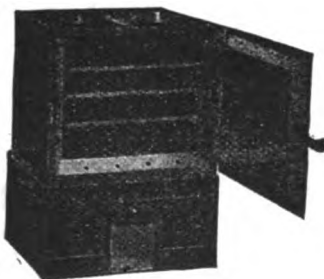
40 00

REMEMBER OUR DISCOUNT.

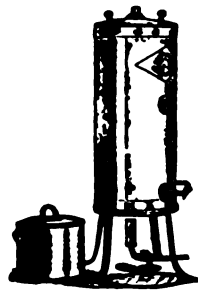
- \*8646/7—**Sterilizer, Hot Air, medium size.** It is of the same width and depth as No. 8646/6 and is also covered with a non-conducting material, making the apparatus economical in the use of the heat applied and enables a uniform temperature to be maintained. There are two shelves. The material is the best quality of iron. Inside dimensions: 24 cm. high, 30 cm. wide and 24 cm. deep.  
Complete with thermometer, thermo-regulator, burner and asbestos mat \$ 29 30
- \*8646/8—**Sterilizer, Hot Air, Physicians'.** It has double walls, ample circulation about the chamber, serviceable surface where heat is applied, tubulations and ventilating strip on top. Material of sterilizer and base is sheet-iron. Inside dimensions: 24 cm. high, 22 cm. wide, 15 cm. deep.  
Complete with thermometer, thermo-regulator, burner and asbestos mat ..... 20 00
- \*8646/9—**Sterilizer, Steam, Koch's.** The sterilizing chamber of this apparatus is arranged so that the articles or substances to be sterilized are placed in a receiver over the steam generating chamber. This arrangement makes the apparatus specially suitable for the sterilization of nutrient media, and for filtering substances such as agar agar, as the funnel and receptacle for the substance may be placed inside during filtration.  
It is made entirely of copper, covered with a non-conducting material, and provided with water gauge, stop-cock and tubulations for thermometer. Inside dimensions: 21.5 cm. diameter, 53 cm. deep. Complete with thermometer, burner and enclosed base (not illustrated) 26 65



8646/10



8646/7



8646/9



8646/8



8650 &amp; 8650/1

APPROXIMATE EQUIVALENTS:

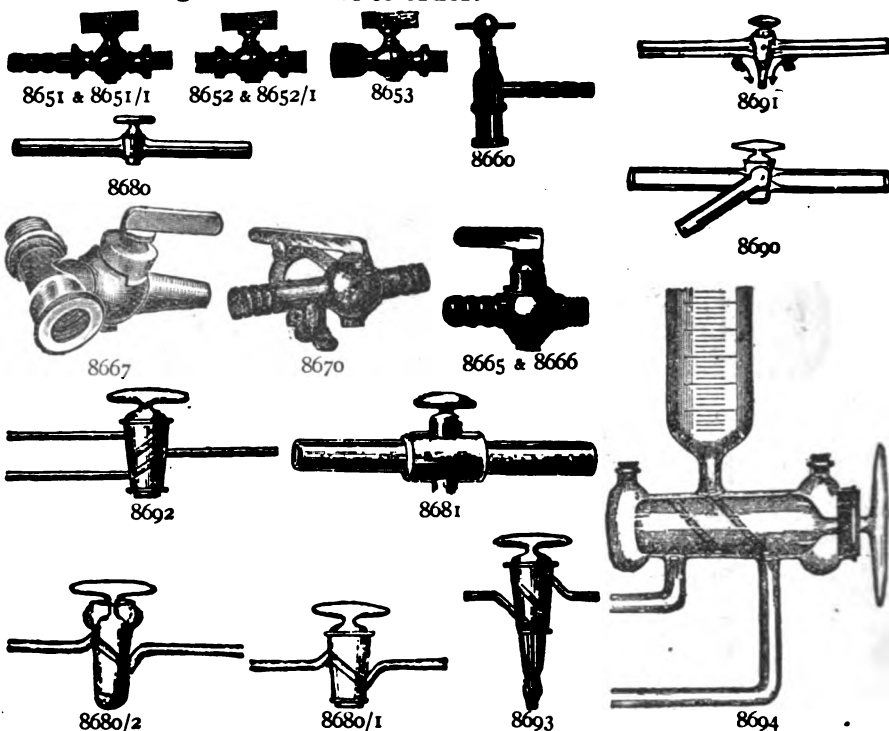
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*8646/10—**Sterilizer, Steam, Physicians'.** This sterilizer has two chambers, one above the other, and separated by a removable, perforated partition upon which the articles to be sterilized are placed. A ring extending around the inner surface of the cylinder prevents the saturation of cotton plugs of tubes by condensation from the sides of the chamber. It is made of copper with base of sheet-iron (not shown in illustration). Inside dimensions of chamber: depth, 30 cm.; diameter, 20 cm.  
Complete, with thermometer and burner ..... 8 00
- For Sterilizers, see also No. 2163/1, etc.**
- 8649—**Stoneware, Chemical,** such as Bottles, Jars, Evaporating Dishes, Kettles, Funnels, Stop-cocks, Mortars, Retorts, Tubes, Troughs, Condensation Towers, Cylinders, Chlorine Generators, Acid Pumps, Pitchers, Pots, etc.  
**Imported to order at lowest rates.**
- \*8650—**Stop-cock,** brass, absolutely air-tight and finely finished, both ends for tube connections, 3 mm. bore ..... 85
- \*8650/1—**Ditto, ditto, ditto, ditto,** 6.3 mm. bore ..... 1 15

*8651—Stop-cock, brass, absolutely air-tight and finely finished, one end male screw, the other for tube connection, 3 mm. bore .....	\$ 0 87
*8651/1—Ditto, ditto, ditto, ditto, 6.3 mm. bore.....	1 15
*8652—Ditto, ditto, ditto, male screws at both ends; 3 mm. bore.....	1 00
*8652/1—Ditto, ditto, ditto, ditto, 6.3 mm. bore.....	1 25
*8653—Ditto, ditto, ditto, one end with male screw, the other with female screw, 3 mm. bore .....	1 00
8654—Ditto, ditto, ditto, female screw at both ends, 3 mm. bore .....	1 00
*8660—Ditto, brass, with universal movement (gallows-screw connector).....	1 30
*8665—Ditto, 9.5 mm. bore, for gas supply.....	1 10
*8666—Ditto, 13 mm. bore, for gas supply.....	1 35
*8667 Ditto. A 9.5 mm. clear way tap, with T branch, for connection between an ordinary gas bracket and the main pipe, to take off gas for heating purposes without interfering with the use of the bracket for light .....	1 95
*8670—Ditto, with quadrant and pointer, 9 5 mm. 13 mm. bore.	
	\$1 55 1 90
*8680—Ditto, of glass, Geissler's, very accurately ground and absolutely air-tight. Bore	1 2 3 4 5 6 8 10 mm.
	\$1 00 1 10 1 50 2 00 3 00 3 50 5 00 7 50

Larger sizes made to order.

REMEMBER OUR DISCOUNT.



*8680/1—Stop-cocks, of glass, Geissler's, new style; each	1 mm. 3 mm. bore.	
	\$1 25 1 90	
*8680/2—Ditto, ditto, Geissler's, new style, with mercury seal; each	2 75 3 50	
*8681—Ditto, ditto, very heavy. Bore	2.5 3.5 5 7 mm.	
	\$1 20 1 30 1 85 2 10	
*8690—Ditto, ditto, Geissler's, three-way, 2 mm. bore.....		2 15
*8691—Ditto, ditto, Geissler's, three-way, with two tubes and discharge from stopper, 2 mm. bore .....		2 15
8691/1—Ditto, same as No. 8691, end piece not turning with the plug, for tube connection, 2 mm. bore .....		2 15
	2 mm. 4 mm. bore.	
*8692—Ditto, ditto, Geissler's, three-way, new form; each	\$2 00 3 00	
*8693—Ditto, of glass, Geissler's, three-way, with discharge from stopper; each .....	2 mm. 4 mm. bore.	
	\$2 00 2 80	
*8694—Ditto, ditto, Geissler's, three-way, horizontal with mercury seal; each.....	2 mm. 3 mm. bore.	
	\$4 10 5 00	

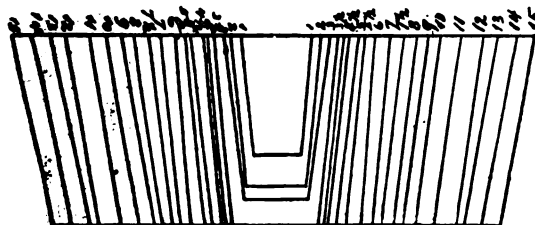


\*8698—Stop-cock, of glass, Geissler's, four-way. Bore, 2 mm. 4 mm.  
\$2 00 2 65

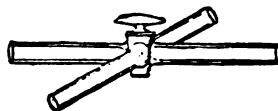
\*8700—Stoppers, of India Rubber, taper form, solid or with one or two holes; best French make. These stoppers will always retain their elasticity.

	No. 1	2	3	3½	4	4½	5
Length.....	16	20	22	25	25	25	25 mm.
Diameter of upper end.....	10	12	14	17	19	20	23 mm.
Diameter of lower end.....	6	8	9	12	14	15	17 mm.
Each.....	\$0 02	03	04	08	10	11	13
Per doz.....	17	28	37	70	95	1 05	1 25
	No. 5½	6	6½	7	7½	8	9
Length.....	25	25	25	25	25	25	25 mm.
Diam. upper end.....	24	27	29	31	34	38	41
Diam. lower end.....	19	23	24	26	28	31	33
Each.....	\$0 16	20	23	25	31	34	45
Per doz.....	1 60	2 00	2 25	2 55	3 10	3 40	4 55
	No. 11	12	13	14	15	16	17
Length.....	25	25	25	25	25	25	25 mm.
Diameter of upper end.....	50	56	60	65	70	75	80 mm.
Diameter of lower end.....	42	48	50	55	60	65	70 mm.
Each.....	\$0 74	85	95	1 15	1 25	1 35	1 45
Per doz.....	7 35	8 45	9 40	11 30	12 70	13 60	14 50

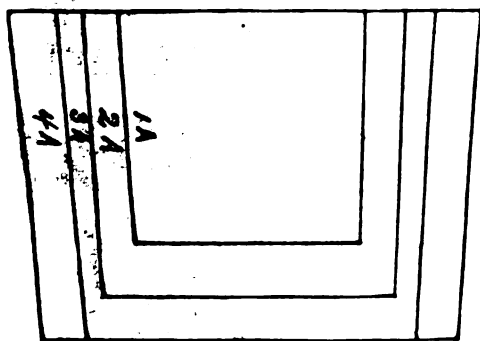
They are also sold by weight at 85 cents per Hecto, or \$8 25 per Kilo.



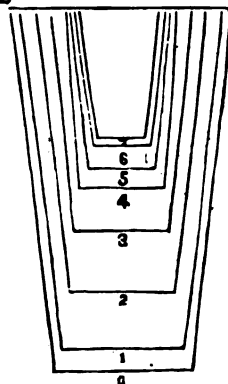
8700, 8701 & 8702



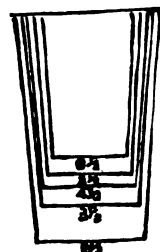
8698



8710



8710



8710

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*8701—Stoppers, of India Rubber, vulcanized, second quality. Any of the above sizes of No. 8700 with 1 or 2 holes, and solid No. 1 to 3 and No. 14 to 15, made to order in quantity of at least 5 kilos.

These stoppers are sold by many dealers as first quality stoppers, but, although they are superior to the common American rubber stoppers No. 8710, as sold by rubber companies, etc., they cannot be compared with the first quality stoppers No. 8700, which are very soft and almost pure rubber. All sizes as given under No. 8700 in solid stoppers No. 3½ to 13 inclusive are kept in stock.

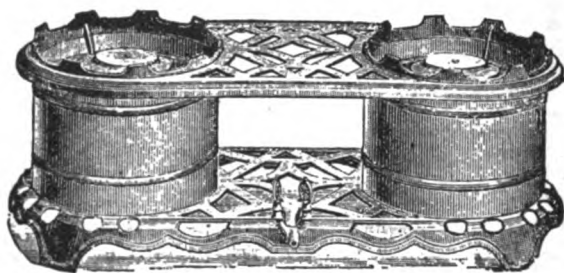
	No. 1	2	3	3½	4	4½	5	5½	6	6½
Each.....	\$0 01	02	03	05	06	07	09	10	13	15
Per doz.....	11	18	24	45	61	67	83	1 00	1 28	1 44
	No. 7	7½	8	9	10	11	12	13	14	15
Each.....	\$0 17	20	22	29	40	47	54	60	73	82
Per doz.....	1 63	1 99	2 18	2 91	3 07	4 75	5 41	6 01	7 23	8 13

They are sold also by weight at 40 cts. per Hecto; \$3 90 per Kilo.

**\*8702—Stoppers, of Red or Antimony Rubber.** Any of the sizes enumerated under No. 8700, solid and with one or two holes furnished to order in quantity of not less than 5 Kilos in the aggregate, and not less than  $\frac{1}{8}$  Kilo of any kind (Illustr. p. 399). Per Kilo..... \$ 9 25

**\*8710—Stoppers, of India Rubber, common American vulcanized, taper form, solid (Illustr. p. 399).**

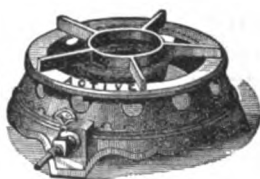
No.....	0	1	2	2½	3	3½	4	4½	5	5½	6	6½	7
Each.....	\$0 10	08	05½	04½	03½	02½	02	02	01½	01½	01	01	01
Per 100..	8 00	6 00	4 00	3 25	2 50	2 00	1 50	1 50	1 00	1 00	75	75	60
No.....						1A	2A			3A		4A	
Each.....						\$0 23	44			80		1 10	
Per 100.....						17 00	33 00			60 00		83 00	



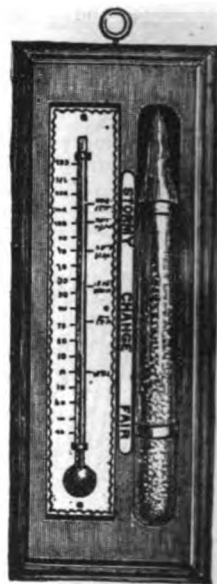
8731/1



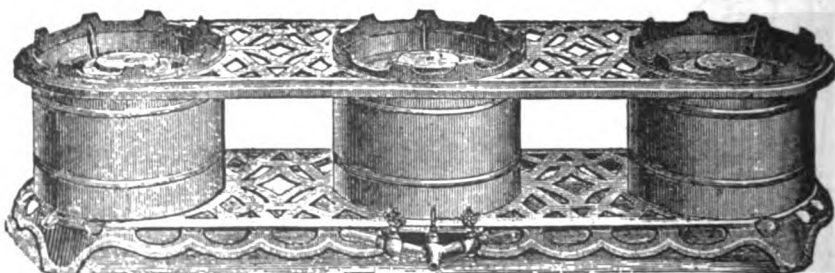
8731



8734



8720



8731/2

**\*8720—Storm Glass, barometer and thermometer combined.** Each 50 cts.; per doz..... 4 00

**\*8731—Stoves, Gas.**

No.	10	20	30
Diameter	14.5	17	21 cm.
	\$ 1 25	1 50	2 00

**\*8731/1—Stoves, Gas, double; 20 cm. high; 51 cm. long..... 5 60**

**\*8731/2—Ditto, ditto, triple; 20 cm. high; 77 cm. long..... 9 25**

See also Burners No. 3846, etc.

**\*8734—Stoves, Gas, Active.** The best stove in the market. Height 11.5 cm. Diameter 21.5 cm. Each..... 3 75

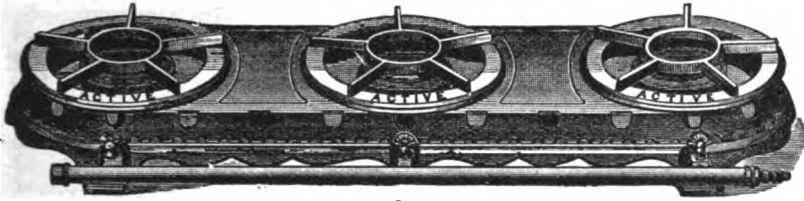
**\*8734/1—Stoves, Gas, Active, double.** Height 11 cm. Length 53 cm (Illustr. p. 401). Each..... 9 25

**\*8734/2—Stoves, Gas, Active, triple.** Height 11.5 cm. Length 82.5 cm. (Illustr. p. 401). Each..... 15 00

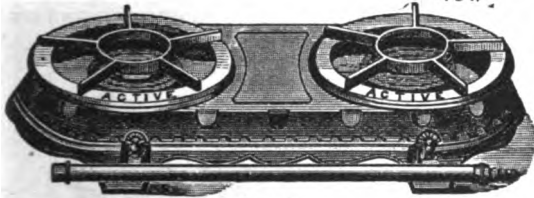
REMEMBER OUR DISCOUNT.

*8735—Stoves, Gas. T. B.	With	1	2	3 burners.
	Each	\$4 00	6 65	9 30
*8736—Stoves, Gas. T. B. No. 301.	With	1	2	3 burners.
Dimensions		28.5x28.5	28.5x57	28.5x86.5 cm.
Each		\$1 65	3 30	5 00

See also Burners No. 3846, etc.



8734/2



8734/1



8735



8740/1

\*8740—Stoves, Coal Oil, with glass oil tank and water pan.

No.	1	2	3	3½
	1 burner.	2 burners.	2 burners.	3 burners.
	7.5 cm.	7.5 cm.	10 cm.	10 cm. wick.
Each	\$ 3 60	4 95	6 30	7 65

\*8740/1—Ditto, ditto, with tin oil tank; 1 burner for 10 cm. wick ..... \$ 1 90

\*8740/2—Ditto, ditto, with tin oil tank and water pan.

No.	0	1	2	3	3½
	1 burner.	1 burner.	2 burners.	2 burners.	3 burners.
	4 cm.	7.5 cm.	7.5 cm.	10 cm.	10 cm. wick.
	\$1 75	2 50	3 40	4 70	6 00

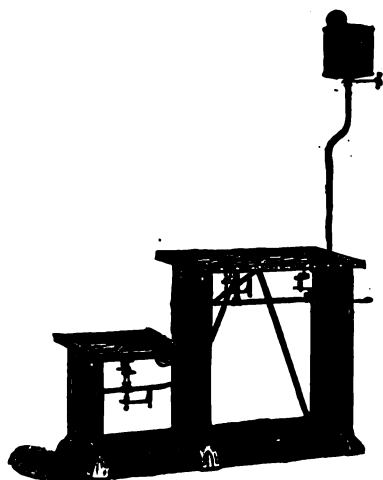
8740/2



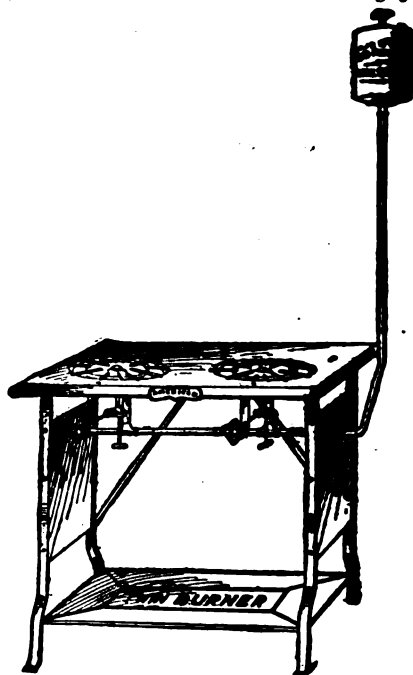
APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

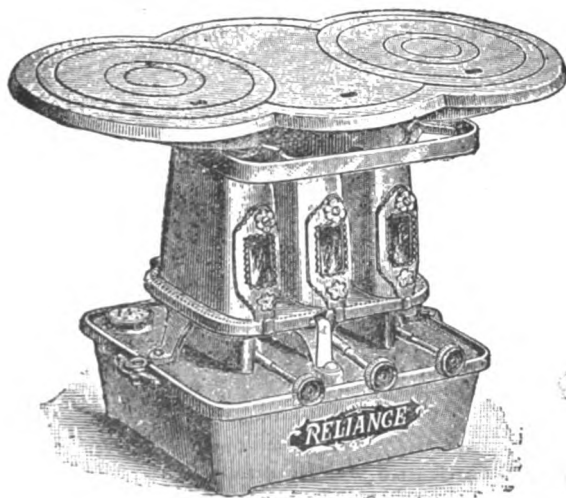
- \*8740/3—**Stoves, Coal Oil.** Lamp Stove, with 3 burners, for 10 cm. wicks, and extension top ..... \$ 7 00
- \*8746—**Stoves, Gasoline, Junior No. 134,** with three individual generating burners and patent lay-down tank. Large Top 43x60 cm., Step Top 43x37 cm ..... 20 00
- 8746/1—Ditto, ditto, with four individual burners. Large Top 43x90 cm., Step Top 43x37 cm ..... 23 30



8746



8748



8740/3



8747

- \*8747—**Stoves, Gasoline, High Junior No. 130,** with three individual burners and lay-down tank. Height 60 cm, Top 43x90 cm ..... 15 00
- 8747/1—Ditto, ditto, with two individual burners and lay-down tank. Height 60 cm., Top 43x60 cm ..... 12 50
- 8747/2—Ditto, ditto, **Low Junior No. 124,** with three individual burners and lay-down tank. Height 35 cm, Top 43x90 cm ..... 12 50
- 8747/3—Ditto, ditto, ditto, with two individual burners and lay-down tank. Height 35 cm., Top 43x60 cm ..... 10 00



**\*8760—Support, for burettes, of iron.**

With	1	2	3 iron clamps.
	\$1 35	1 95	2 55

**\*8761—Ditto, ditto, ditto.**

With	1	2	3 brass clamps.
	\$1 65	2 50	3 40

**\*8762—Ditto, ditto, ditto.**

With	1	2	3 nickel-plated brass clamps.
	\$1 80	2 85	3 95

**\*8770—Ditto, ditto, ditto, with 1 Hoffman's double clamp, for 2 burettes.....**

\$ 1 90

**8771—Ditto, ditto, ditto, with 2 Hoffman's double clamps, for 4 burettes.....**

3 05

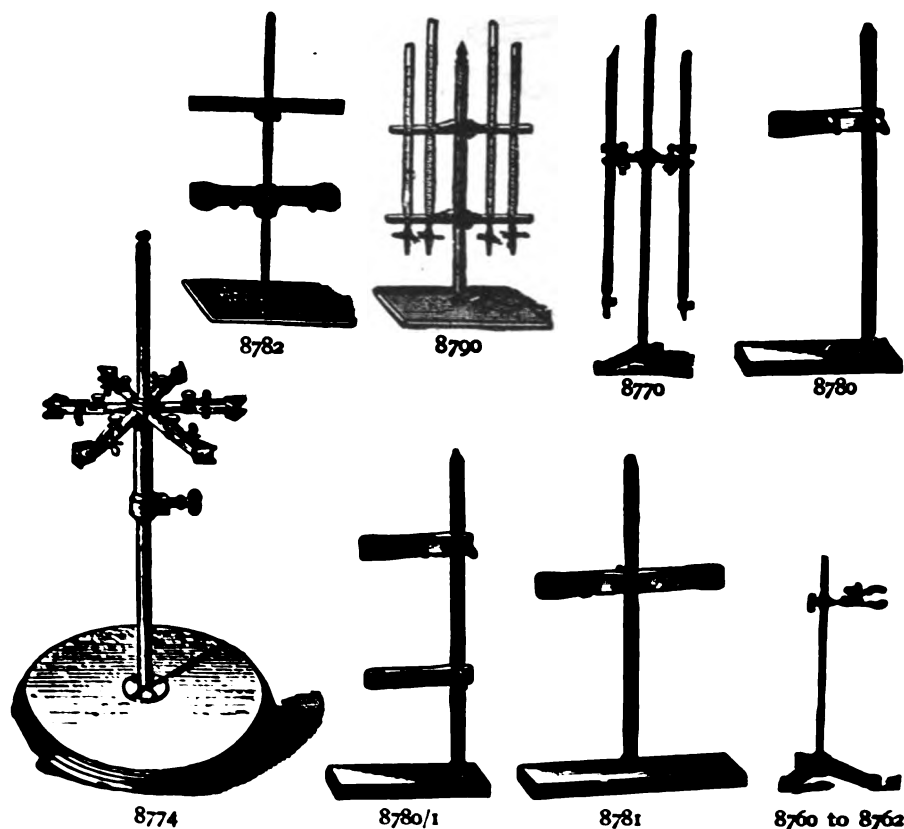
**8772—Ditto, ditto, ditto, with 1 Hoffman's clamp for 1 burette (No. 4125).....**

1 75

**\*I 8774—Support, for burettes, on round base, movable,**

For	4	6	8 burettes
Each	\$8 00	10 00	13 50

REMEMBER OUR DISCOUNT.

**\*8780—Support, for burettes, of black walnut, with movable arm and cork-lined jaws, for 1 burette.....**

1 20

**\*8780/1—Ditto, ditto, ditto, with movable arm and cork-lined jaws, for 1 burette, with extra arm to keep the burette in place.....**

1 55

**\*8781—Ditto, ditto, ditto, with movable arm and cork-lined jaws, for 2 burettes**

1 55

**\*8782—Ditto, ditto, ditto, with movable arm and cork-lined jaws, for 2 burettes, with extra arm to keep the burettes in place.....**

1 85

**\*8790—Ditto, for burettes, of wood, for 4 Mohr's spring-clamp burettes, with two wooden arms.....**

1 65

**\*8800—Ditto, ditto, revolving, with wooden base (Illustr. p. 405).....**

3 75

**\*8801—Ditto, ditto, ditto, with enameled base (Illustr. p. 405).....**

6 25

**\*8810—Ditto, for condensers, of iron and brass, Bunsen's, nicely finished (Illustr. p. 405).....**

3 90

**\*8811—Ditto, ditto, ditto, large (Illustr. p. 405).....**

4 65

**\*8820—Ditto, ditto, of iron, with Bunsen's clamp No. 4130 (Illustr. p. 405).....**

1 85

**\*8821—Ditto, ditto, ditto, heavy, Bunsen's extra large clamp No. 4131.....**

2 90

- 8822—Supports, for condensers, of iron, heavy, with universal double-jointed clamp No. 4132 ..... \$ 2 85  
 \*8830—Ditto, ditto, of wood, according to Liebig ..... 1 85  
 \*8831—Ditto, ditto, of polished mahogany, according to Liebig ..... 5 00  
 \*8832—Ditto, ditto, of wood, with heavy square base, not with triangular base, as shown on illustration.  
 For condensers of 40 cm. 50 cm. 60 cm. 75 cm. 100 cm. length.  
 Each..... \$2 50 2 75 3 00 3 50 4 00



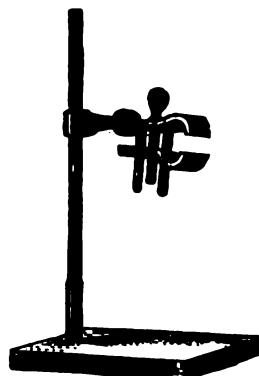
8800 &amp; 8801



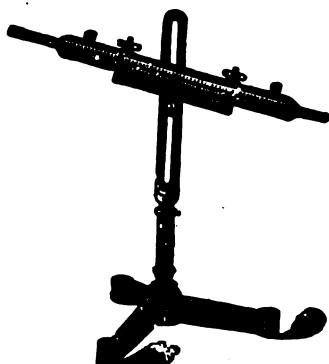
8810 &amp; 8811



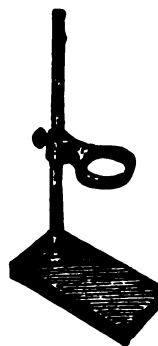
8820



8830 &amp; 8831



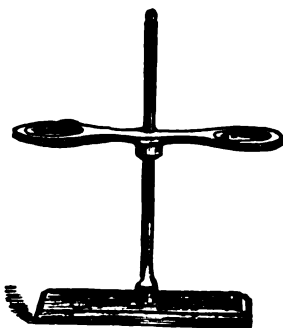
8833



8840



8832



8845



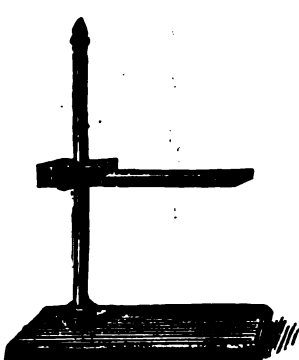
8850

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

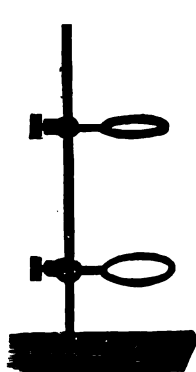
- \*8833—Supports, for condensers, Bunsen's modification ..... 4 65  
 8835—SUPPORTS, EXTRA LARGE, for large condensers, made to order at lowest prices.  
 \*8840—Supports, for funnels, of wood, walnut base, one arm, with one ring ..... 1 10  
 8841—Ditto, ditto, ditto, two arms, with rings ..... 1 65  
 \*8845—Ditto, ditto, ditto, one arm, with two rings ..... 1 50  
 \*8850—Ditto, ditto, ditto, according to Fresenius, for one funnel ..... 1 10

8851—Supports, for funnels, of wood, according to Fresenius, with double base and two plates, for two funnels.....	\$ 1 65
*8855—Ditto, ditto, ditto, with one straight arm, for two funnels.....	90
8855/1—Ditto, ditto, ditto, with two straight arms, for four funnels.....	1 35
*8856—Ditto, ditto, ditto, with one straight double arm, for four funnels.....	1 20
8857—Ditto, ditto, ditto, with two straight double arms, for eight funnels.....	1 65
8858—Ditto, ditto, for six funnels, as used in sugar houses, the funnels in one line between two uprights; height adjustable.....	4 35

REMEMBER OUR DISCOUNT.



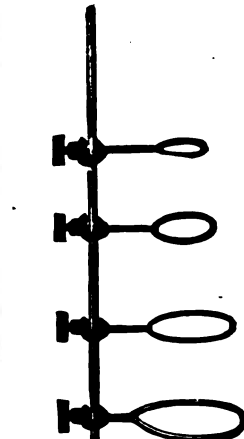
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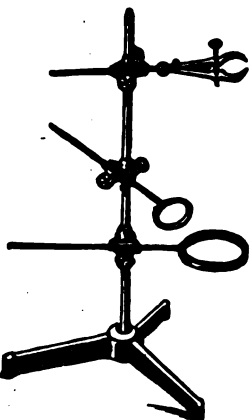
8862



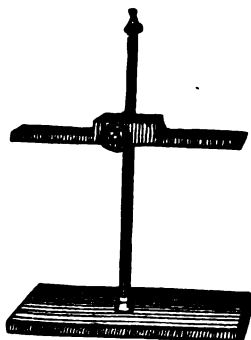
8880



8863



8870



8856



8890



8876

\*8862—Supports, of iron, Ring Stands, also called Retort Stands, with improved clamps having triangular openings, easily detachable and fitting any size of iron rod; with milled screws and beveled rings. With square base. Superior to any Ring Stands in the market.

With.....	2	3	4 rings
Each.....	\$0 80	1 10	1 65

\*8863—Ditto, ditto, ditto, extra large, with four rings, with heavy triangular base.....

1 90

\*8870—Ditto, of iron, with extension rings, (Burette clamp on drawing not included). With.....

2	3	4 rings.
\$1 35	1 85	2 30

8875—Ditto, of iron, with fork for Bunsen's Burner, and one ring.....

1 45

\*8876—Ditto, ditto, with Bunsen's Burner with star and chimney.....

2 90

8877—Ditto, of walnut, for hydrometers of various sizes, each.....

1 10

\*8880—Ditto, for 12 pipettes, of polished wood, revolving.....

3 10

8881—Ditto, for pipettes, of wood, similar to No. 8925.....

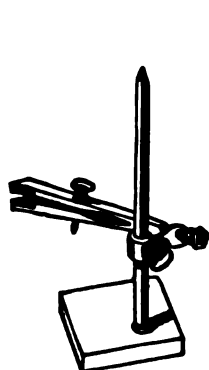
94

\*8890—Ditto, for retorts, of wood; an upright clamp, with sliding rod on wooden base.....

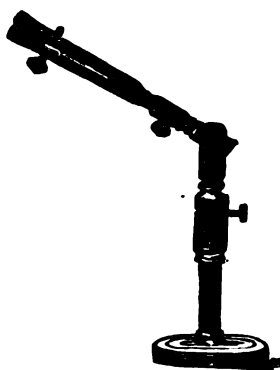
1 25



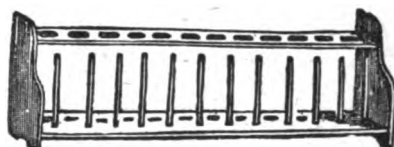
*8900—Supports, for retorts, of wood, Gay Lussac's, with universal motion and cork-lined jaws.....	\$ 1 60
*8911—Ditto, ditto, ditto, Schellbach's with universal motion, on heavy base.....	2 50
*8915—Ditto, of wood, for holding strainers, felt filtering bags, etc.	
15                      20                      25                      30                      35 cm. square.	
\$0 25                      31                      37                      44                      50	
*8920—Ditto, for test-tubes, of black walnut, for 12 tubes in two rows; per doz. \$4.00; each.....	35
*8925—Ditto, ditto, ditto, for 13 tubes, usual form; per doz. \$5 75; each.....	50
8930—Ditto, ditto, ditto, for 12 tubes in two rows, like No. 8920, but with 6 drying points; per doz. \$6 75; each.....	60
8934—Ditto, ditto, ditto, for 12 tubes in one row; per doz. \$4 25; each.....	37



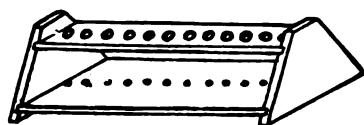
8900



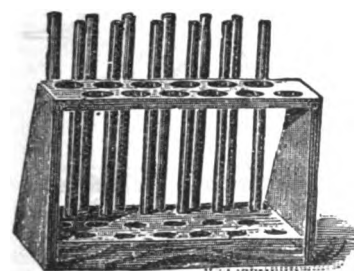
8911



8935



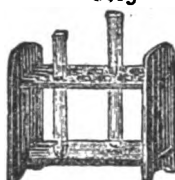
8945 &amp; 8946



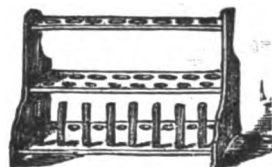
8950



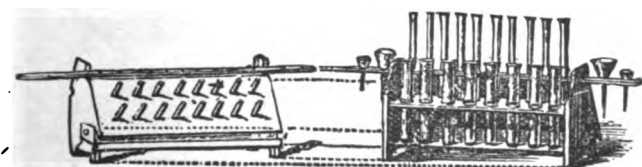
8015



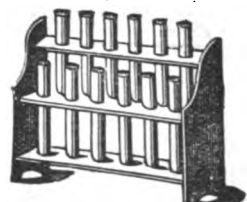
8920



8940



8955

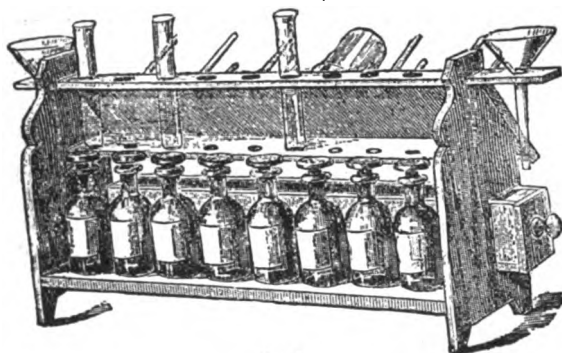


8925

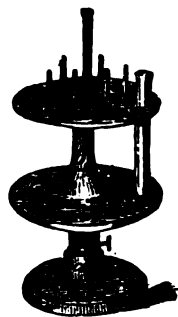
*8935—Supports, for test-tubes, of black walnut, for 12 tubes in one row, with 12 drying points; per doz. \$7 75; each.....	70
*8940—Ditto, ditto, ditto, for 13 tubes, usual form, with 7 drying points; per doz. \$8 50; each.....	75
*8945—Ditto, ditto, ditto, extra large, with 12—35 mm. holes in a row.....	1 55
*8946—Ditto, ditto, ditto, ditto, of polished mahogany ..	3 50
*8950—Ditto, ditto, of black walnut, Fresenius', for 12 tubes, with 12 drying points.....	1 25
*8955—Ditto, ditto, ditto, Erlenmeyer's with holders for four funnels; drying points, drawer for pipettes, etc., and support for three 30 cc. bottles and alcohol lamp. The best test-tube stand made.....	3 00

APPROXIMATE EQUIVALENTS:  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

- \*8956—Supports; for test-tubes, of black walnut, Erlenmeyer's, heavier, fitted with 18 test-tubes, 2 pipettes, 2 stirring rods, 8 reagent bottles 30 cc. capacity, and 2 funnels 7 cm. .... \$ 5 95
- 8960—Ditto, ditto, for 25 tubes, plain, usual shape, fig. 8925 ..... 95
- 8965—Ditto, ditto, for 25 tubes, with drying points, fig. 8940 ..... 1 25
- \*8966—Ditto, ditto, of wood, with one or two uprights, according to the number of tubes it holds. For 6 8 12 16 24 tubes.  
Each ..... \$0 85 1 10 1 40 1 75 2 10
- \*8970—Ditto, ditto, of polished wood, revolving, with drying points, for 12 tubes. .... 1 90



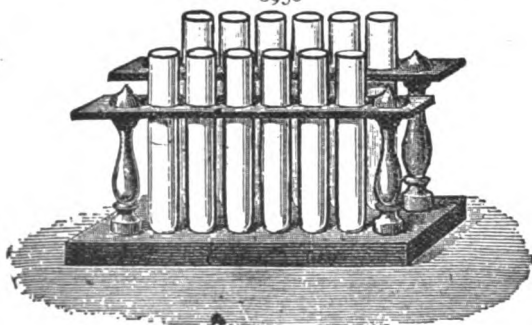
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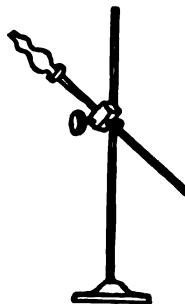
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8975



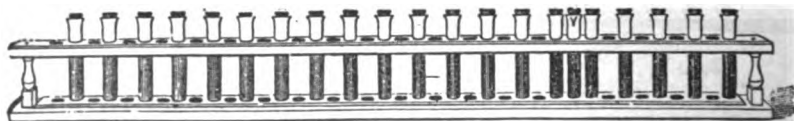
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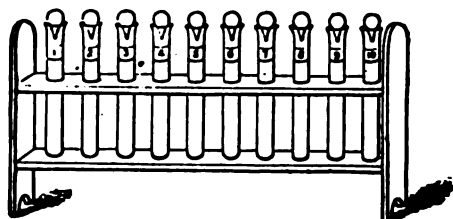
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8979

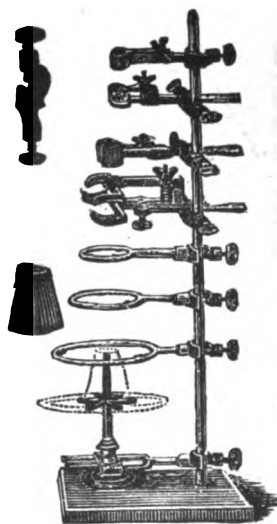
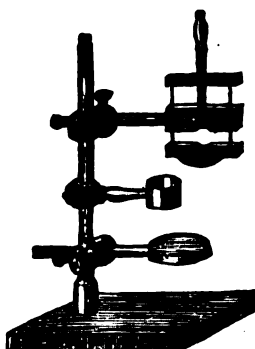
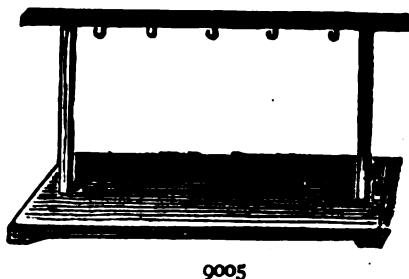
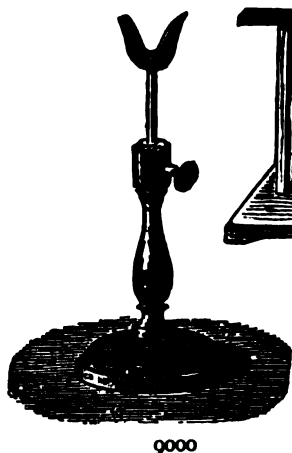
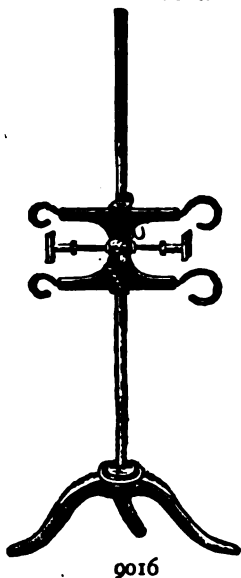


8978

- \*8975—Supports, for test-tubes, of iron, very light, with pins on top, for 8 tubes. (Clamps charged extra) ..... 2 00
- \*8978—Support, for 10 color comparing tubes; heavy wood ..... 1 25
- \*8979—Ditto, for 20 color comparing tubes. .... 2 20
- \*8980—Ditto, very light, for tubes, matrasses, platinum wire, etc.; of brass, with universal joint, nickel-plated. .... 2 10
- \*8985—Ditto, very light, for holding wires for flame reactions, Bunsen's ..... 1 20

REMEMBER OUR DISCOUNT.

- \*9000—Supports, for tubes, etc.; of wood. Fork on sliding rod.  
 Height, when drawn out, 25 30 35 cm.  
 \$0 85 95 1 05
- \*9005—Ditto, for U tubes, potash bulbs, etc.; frame of wood, nicely finished ..... \$ 2 50
- \*9006—Ditto, ditto, with adjustable cross arm ..... 2 50
- \*9011/I—Support, Universal, of iron; a strong, large 4 ring stand (only 3 rings shown on sketch), with 4 clamps No. 4115, 4120, 4125 and 4132, Fork for Bunsen's Burner, and Bunsen's Burner with star and chimney ..... 7 65

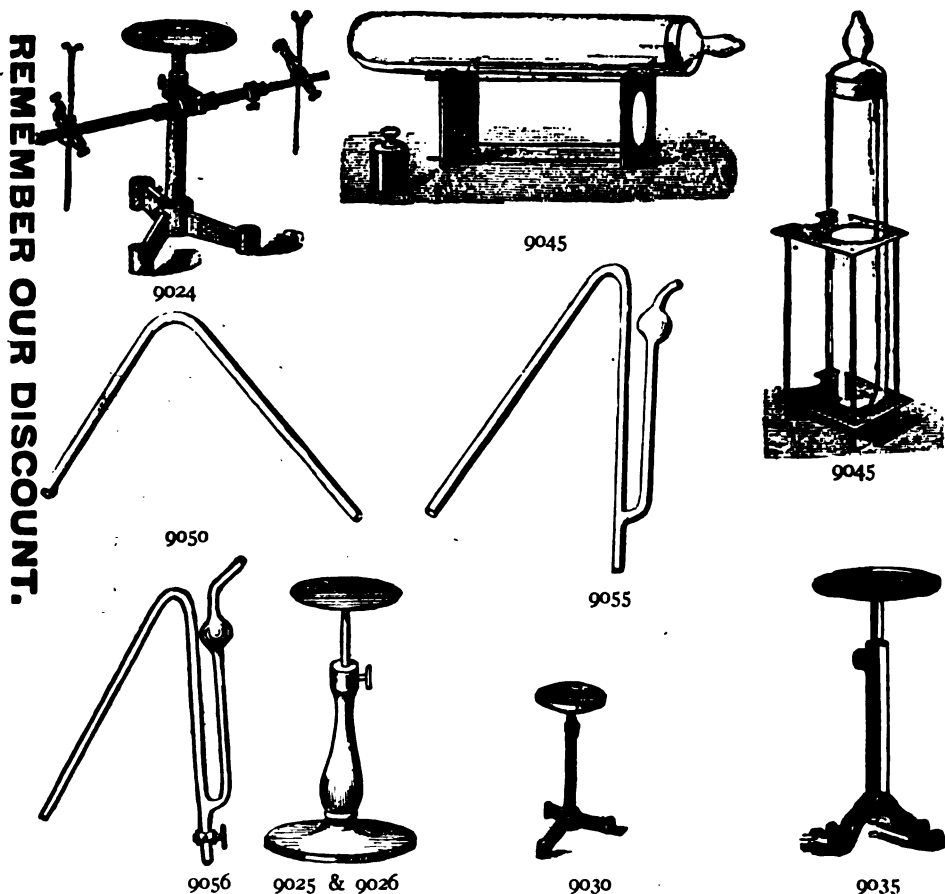


- \*9012—Support, Universal, of iron; a strong, large 4 ring stand, with 4 clamps No. 4120, 4125, 4130 and 4131, Fork for Bunsen's Burner, Bunsen's Burner with star and chimney, and Blow-pipe Tube No. 3890 ..... 7 65
- \*9015—Ditto, ditto, with round porcelain base, metal fittings, and improved burette holders, etc. .... 8 75
- \*9016—Ditto, ditto, ditto, on triangular iron base ..... 5 50
- \*9020—Ditto, ditto, of hardwood, with funnel holder, support table for lamp, and clamp for retort or condenser ..... 4 00
- \*9021—Ditto, ditto, of polished wood, with funnel holder, support table for lamp, and clamp for retort or condenser ..... 6 00
- \*9022—Ditto, ditto, according to Dr. Squibb ..... 8 30

APPROXIMATE EQUIVALENTS:  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*9024—Support, for absorption tubes..... \$ 5 00
- \*9025—Supports, Table, of hardwood, foot loaded with lead.  
Height at its greatest extension      25    33    38    48    63 cm.  
\$0 90   1 00   1 10   1 20   1 50
- \*9026—Ditto, of polished wood, elegantly finished; diameter of plate 15 cm.;  
height at full extension 50 cm.; height when plate is lowered 30 cm.      2 50
- \*9030—Ditto, iron, with polished wooden plate; the finest support table  
made. They are very heavy and stand firm.  
Diameter of plate.....      7      9      12      15 cm.  
\$2 10   2 50   2 85   3 35
- \*9035—Ditto, oak wood; height when fully extended 90 cm. .... 4 00
- 9040/1—Ditto, ditto; a wooden plate, attached to an iron rod, sliding in clamp,  
fitting any iron ring stand ..... 1 25
- 9041—Ditto, ditto, all wood, fitting wooden supports..... 1 25

**SUPPORTS OF ANY DESIGN MADE TO ORDER AT  
REASONABLE RATES.**



- \*9045—Support for weighing tubes, of metal, each ..... 1 85
- \*9050—Syphons, of glass, plain.  
Length of limb.....      20    30    38    45    60    75 cm.  
\$0 20   25   31   37   50   62
- \*9055—Ditto, ditto, with suction tube, best German.  
Length of limb.....      20    25    30    45    60    75    90 cm.  
\$0 35   40   38   50   85   1 25   1 75
- \*9056—Ditto, of glass, with suction tube, with Geissler's glass stop-cock,  
best German make.  
Length of limb.....      25      30      45      65      75 cm.  
\$1 40   1 55   1 75   2 10   2 25

\*9057—**Syphons**, glass, according to Sedlaczek, with valve for drawing off acids, etc., by blowing..... 25 30 50 cm. long.  
Each \$1 50 1 75 2 00

9059—**Syringes of every description, glass, metal and rubber, furnished at lowest prices.**

9060—**Tantalus Cups.** See Catalogue of Physical Apparatus.

\*9070/1—**Tape Measures, metallic**, in hard leather case, brass folding handles and brass trimmings. Tape 15.9 mm. ( $=\frac{5}{16}$  inch) wide, made of best woven linen with metallic warp.

Length.....	25	33	40	50	66	75	100 ft.
Marked on one side only. 12ths. Each.....	\$3 55	4 20	4 60	5 25	5 90	6 50	8 20
Marked on both sides. 12ths and Links. } Each ...	3 80	4 40	4 85	5 45	6 30	5 85	8 80
Marked on both sides. 10ths and Links. }							

9070/2—Ditto, ditto, marked in meters and centimeters on back instead of links. Prices same as No. 9070/1, marked on both sides.

9070/3—Ditto, ditto, marked in feet on back instead of links. Prices same as No. 9070/1, marked on both sides.

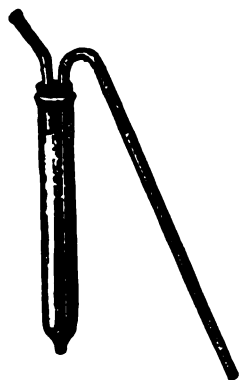
9070/4—Ditto, ditto, <b>marked in meters and centimeters</b> , on one side only. Length.....	10	15	20	25	30 meters.
Each.....	\$4 20	5 25	5 90	7 15	8 20

9070/5—Ditto, **without cases.**

Length.....	25	33	40	50	66	75	100 ft.
Marked on one side only. Each.....	\$1 45	1 80	2 15	2 50	2 90	3 25	4 70
Marked on both sides. Each.....	1 60	2 00	2 35	2 70	3 25	3 60	5 25

9070/6—Ditto, **without cases.**

Length.....	10	15	20	25	30 meters.
Marked on one side. Each.....	\$1 80	2 50	2 90	3 75	4 70



9057



9070/1



9071/1

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*9071/1—**Tape Measures, Pocket Steel**, german silver cases, spring wind, with stop.

36 inches, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ ths. Each	\$ 1 75
48 inches, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ ths. Each	2 25
60 inches, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ ths. Each	2 40
72 inches, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ ths. Each	2 60
84 inches, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ ths. Each	3 20
96 inches, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ ths. Each	3 50
10 feet, 8 mm. ( $=\frac{5}{16}$ inch) tape, marked feet, inches and $\frac{1}{16}$ ths. Each	4 00
12 feet, 8 mm. ( $=\frac{5}{16}$ inch) tape, marked feet, inches and $\frac{1}{16}$ ths. Each	4 35
36 inches and 1 meter, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ inch one side, millimeters other side. Each	1 85
60 inches and 1½ meters, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ inch one side, millimeters other side. Each	2 60
72 inches and 2 meters, 6.35 mm. ( $=\frac{1}{4}$ inch) tape, marked inches and $\frac{1}{16}$ inch one side, millimeters other side. Each	2 80
10 feet and 3 meters, 8 mm. ( $=\frac{5}{16}$ inch) tape, marked inches and $\frac{1}{16}$ inch one side, millimeters other side. Each	4 40
12 feet and 4 meters, 8 mm. ( $=\frac{5}{16}$ inch) tape, marked inches and $\frac{1}{16}$ inch one side, millimeters other side. Each	4 75

**\*9071/5—Tape Measures, Pocket Steel, with handsome and durable round edge nickel-plated cases, spring wind, center stop.**

36 inches, 6.35 mm. ( $=\frac{1}{4}$  inch) tape, marked inches and  $\frac{1}{16}$ ths.

Each \$1 23; per doz. \$ 12 25

60 inches, 6.35 mm. ( $=\frac{1}{4}$  inch) tape, marked inches and  $\frac{1}{16}$ ths.

Each \$1 58; per doz. 15 75

72 inches, 6.35 mm. ( $=\frac{1}{4}$  inch) tape, marked inches and  $\frac{1}{16}$ ths.

Each \$1 75; per doz. 17 50

96 inches, 6.35 mm. ( $=\frac{1}{4}$  inch) tape, marked inches and  $\frac{1}{16}$ ths.

Each \$2 45; per doz. 24 50

8 feet, 6.35 mm. ( $=\frac{1}{4}$  inch) tape, marked feet, inches and  $\frac{1}{16}$ ths.

Each \$2 45; per doz. 24 50

**9071/6—Tape Measures, Pocket Steel, same as No. 9071/5, marked inches and  $\frac{1}{16}$ th on one side, millimeters on the other side.**

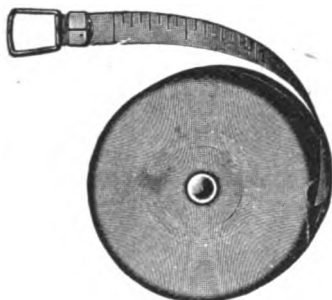
36 inches and 1 meter; each \$1 40; per dozen 14 00

60 inches and  $1\frac{1}{2}$  meters; each \$1 75; per dozen 17 50

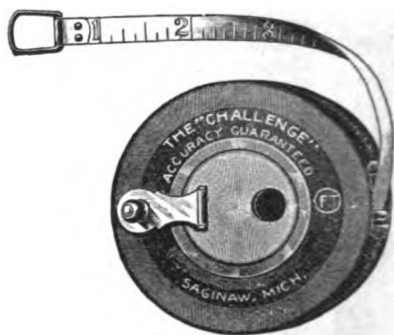
72 inches and 2 meters; each \$2 10; per dozen 21 00

96 inches and  $2\frac{1}{2}$  meters; each \$2 80; per dozen 28 00

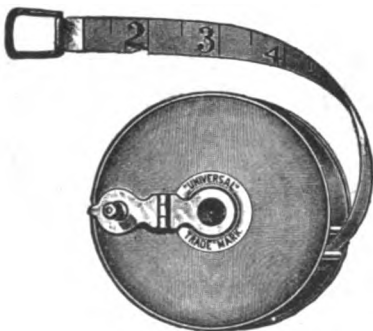
REMEMBER OUR DISCOUNT.



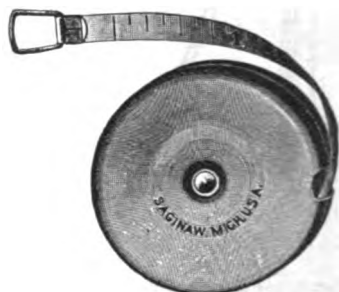
9071/5



9072/1



9075



9074

**\*9072/1—Tape Measures, steel, in hard leather cases, nickel-plated trimmings, flush handle, 9.5 mm. ( $=\frac{3}{8}$  inch) tape, marked one side only in  $\frac{1}{16}$ ths or  $\frac{1}{8}$ ths.**

Length ..... 25 50 75 100ft.

Marked feet and 12ths., (inches and eighths). Each \$6 85 8 40 11 00 14 20

Marked feet, 10ths. and 100ths. of ft. for Surveyors' use. Each ..... 6 85 8 40 11 00 14 20

**9072/2—Ditto, marked in Meters and Centimeters. One side only. Millimeters the first 10 Centimeters.**

Length ..... 10 15 20 25 30 meters.

Each ..... \$7 35 8 40 10 50 12 60 14 20

**\*9074—Tape Measures, Linen, nickel-plated brass cases, spring wind, with center stop. 6.35 mm. ( $=\frac{1}{4}$  inch) enameled linen tape.**

Each ..... 36 60 72 inches.

Per dozen ..... \$0 56 72 80

Per dozen ..... 5 60 7 20 8 00

**\*9075—Tape Measures, Universal, ass skin with 12.7 mm. ( $=\frac{1}{2}$  inch)**  
cotton tape, brass bound case, brass folding handles. (Illustr. p. 412.)

Length.....	25	30	40	50	66	75	100 ft.
Each.....	\$0 49	52	59	65	78	98	1 17
Per dozen.....	4 90	5 20	5 85	6 50	7 80	9 75	11 70

**9075/1—Tape Measures.** Same as No. 9075, marked in Meters and Centimeters, one side only.

Length.....	10	15	20	25	30 meters.
Each.....	\$0 56	65	78	1 08	1 17
Per dozen.....	5 55	6 50	7 80	10 75	11 70

**\*9076—Tape Measures, "Rival" Steel.** Nickel-plated cases, flush handle, 9.5 mm. ( $=\frac{3}{8}$  inch) tapes, marked on one side only.

	25	50	75	100 ft.
Marked feet and 12ths., (inches and eighths). Each	\$4 85	5 95	7 90	10 10

Marked feet, 10ths. and 100ths. of ft. for Surveyors' use. Each	4 85	5 95	7 90	10 10
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**9076/1—Tape Measures, "Rival" Steel.** Same as No. 9076, marked inches on one side, metric measure on other side.

Each.....	\$5 95	8 05	11 20	15 50
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**9076/2—Tape Measures, "Rival" Steel.** Same as No. 9076, but marked in Meters and Centimeters. One side only. Millimeters the first 10 Centimeters.

Length.....	10	15	20	25	30 meters.
Each.....	\$5 40	7 00	8 75	10 50	11 85



9076



9077



9100

**\*9077—Tape Measures, Metallic, flush handle.** Tape 15.9 mm. ( $=\frac{5}{8}$  inch) wide, made of best woven linen, with metallic warp. Hard Leather Case.

Length.....	25	33	40	50	66	75	100ft.
Marked one side only, 12ths. Each	\$3 50	4 05	4 40	4 90	5 45	5 95	7 35
Marked both sides, 12ths. and Links. Each	3 70	4 20	4 55	5 10	5 80	6 30	7 90
Marked both sides, 10ths. and Links. Each	3 70	4 20	4 55	5 10	5 80	6 30	7 90

**9077/1—Tape Measures, Metallic, flush handle.** Same as No. 9077, but Tapes marked in Meters and Centimeters on back, instead of links. Prices same as No. 9077, marked on both sides.

**9077/2—Tape Measures, Metallic, flush handle.** Same as No. 9077, but Tapes marked feet on back instead of links. Prices same as No. 9077, marked on both sides.

**9077/3—Tape Measures, Metallic, flush handle.** Same as No. 9077, but Tapes only marked in Meters and Centimeters, one side only. Length.....

10	15	20	25	30 meters.	
Each.....	\$4 05	4 90	5 45	6 50	7 35

**9080—Tapers, of wax, to burn in oxygen; per doz. \$0 10; per gross.....** \$ 1 00 .

**Telegraph Instruments.** See Catalogue of Physical Apparatus No. 6592, etc.

**\*9100—Test Glasses, of Bohemian glass, cylindrical shape, with lip**

35	70	100	200	250 grms.
\$0 18	25	30	37	44

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*9105—Test Glasses, of Bohemian glass, conical shape, with lip.

35	70	100	200	250 grms.
\$0 18	25	30	37	44

\*9106—Ditto, ditto, conical shape, with lip.

35	70	100	200	250 grms.
\$0 18	25	30	37	44

\*9110—Test Tubes, best German make, well annealed, free from lead.

	75x10	100x12.5	130x12.5	130x15	130x19	160x16/17 mm.
Doz. ....	\$0 25	31	35	38	45	44
Per 100	1 52	2 15	2 40	2 60	3 20	3 15
	160x19	180x20	200x24/25	230x26	250/260x28	310x34 mm.
Doz. ....	50	62	75	1 10	1 55	4 00
Per 100	\$3 25	4 30	5 60	8 45	10 55	25 00

9110/1—Test Tube Caps, of India Rubber. Each 8 cts.; doz. .... \$ 0 75

9111—Test Tubes, best German make, in nests of 6, from 75 to 160 mm.; per nest ..... 32

\*9112—Test Tubes, best German make, well annealed, free from lead, with bulb, to prevent boiling over.

	150x16 mm.	180x18 mm.
Per dozen	\$0 80	1 00
Per 100 ....	6 50	8 25

\*9115—Test Tubes, best German make, well annealed, free from lead, with side neck.

	12 to 13 cm.	16 cm.	18 cm.	20 cm.	25 cm.
Each	\$0 10	11	13	16	25
Doz.	94	1 05	1 25	1 60	2 50

REMEMBER OUR DISCOUNT.



9110



9130



9125



9115

9121

9122



9120

9120/1



9112



9106



9105

\*9120—Test Tubes, of hardest infusible heavy Bohemian glass.

These test tubes are made of Bohemian Combustion Tubing and are much better than the kind sold as Ignition Tubes.

	13 cm.	16 cm.	18 cm.	21 cm.	25 cm.
Each	\$0 16	26	28	32	48

\*9120/1—Test Tubes of hard glass (Ignition Tubes); sold by some houses as infusible Bohemian.

	10 cm.	13 cm.	15 cm.	18 cm.	20 cm.	25 cm.
Each	\$0 06	08	10	12	18	25

\*9121—Ditto, of hardest infusible heavy Bohemian glass, with side tube. These test tubes are made of Bohemian Combustion Tubing and are much better than the kind sold as Ignition Tubes.

	13 cm.	16 cm.	18 cm.	21 cm.	25 cm.
Each	\$0 50	60	70	80	90

\*9122—Test Tubes of hard glass (Ignition Tubes), with side tube, sold by some houses as infusible Bohemian.

	13 cm.	16 cm.	18 cm.	20 cm.	25 cm.
Each	\$0 15	19	25	31	50

\*9125—Ditto, on foot, best German make.

	7.5	10	12	15	18	21	25 cm.
Each	\$0 08	10	12	15	18	23	25
Doz.	80	1 00	1 15	1 50	1 80	2 25	3 00



**9126—Test Tubes, on foot, graduated in cubic centimeters.**

	5 cc. in $\frac{1}{4}$	5 cc. in $\frac{1}{8}$	10 cc. in $\frac{1}{4}$	10 cc. in $\frac{1}{8}$
Each	\$0 35	62	50	69
	15 cc. in $\frac{1}{4}$	15 cc. in $\frac{1}{8}$	25 cc. in $\frac{1}{4}$	25 cc. in $\frac{1}{8}$
Each	55	75	63	94

\*9130—**Test Tube Cleaner**, sponge on rattan handle, (Probangs.) (Illustr. p. 414.) Each \$0 10; per doz. ....

\$ 1 10

\*9135—**Thermometer, Gas**, complete on stand (Fischer's Zeitschr., 1888, p. 366).....

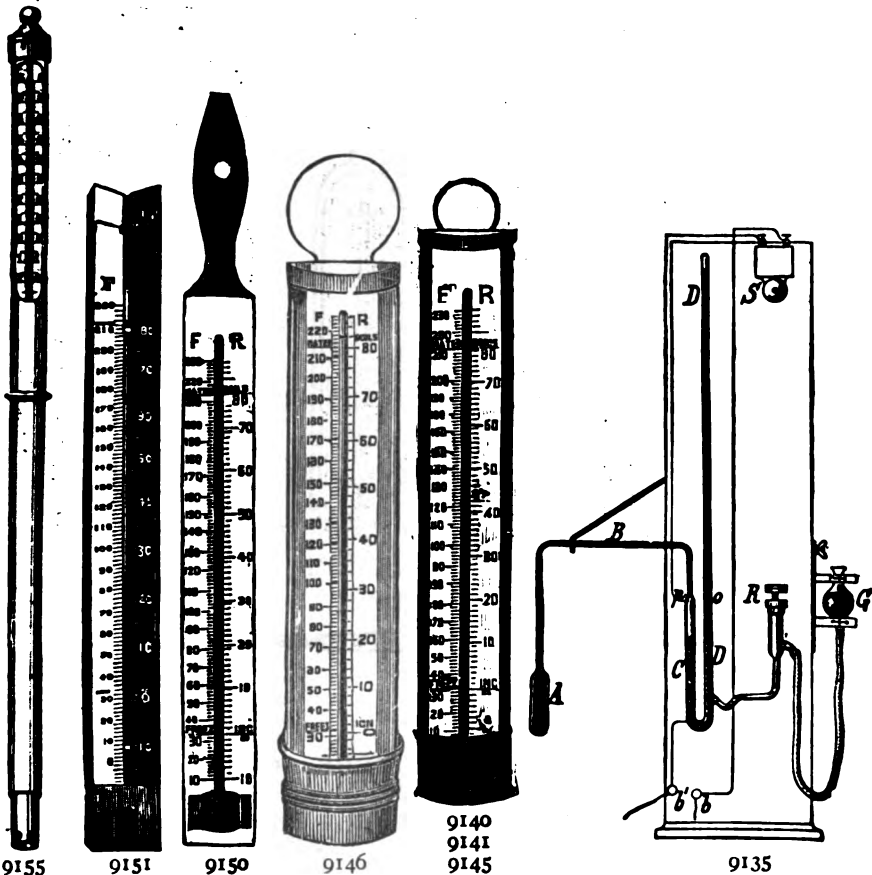
12 00

\*9140—**Thermometers, Brewers'**, extra heavy and absolutely reliable, in japanned tin case, 30 cm. long, R. & F.; each, \$1.85; per doz. ....

18 00

\*9141—**Ditto, ditto, ditto**, 35 cm. long, R. & F.; for use in cellars, registering from 30° below Zero to 130° or 140° above Zero F. The Reaumur scale is divided in single degrees. The best "Cellar Thermometer" made; each, \$2.40; per doz. ....

24 00



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*9145—**Ditto, ditto, extra heavy, copper case**, 30 cm. long, R. & F., each, \$2.50; doz. ....

25 00

\*9146—**Ditto, ditto, extra heavy, copper cup**, 30 cm., R. & F., registering from 10° below Zero to 300° above Zero F.; each, \$3 00; per doz. ....

30 00

\*9150—**Ditto, ditto, extra heavy, on wooden back or strop**, 30 cm. long, R. & F.; each, \$1 90; doz. ....

19 50

\*9151—**Ditto, ditto, 30 cm. V grooved walnut case**, extra heavy scale and tube, for barrels, R. & F. scales; the R. scale registering from at least 5° below Zero to 35° above Zero; each, \$2 50; per doz. ....

25 00

9152—**Ditto, ditto, Bronze Angle, certified**; each

17 50

\*9155—**Ditto, Brewers' and Distillers'**, for vats; 90 cm. long, enclosed in round polished wooden case; with milk-glass scale at upper end; each

7 50

\*9160—**Thermometers, Cabinet**, walnut case, oval or square end, without bulb protection, F. Elegant thermometers, fig. 9160 A and B.

	20 cm.	25 cm.
Each.....	\$0 70	95
Doz. ....	5 80	7 50

\*9180—Ditto, ditto, in mahogany frame, scale of milk glass, 25 cm., in R. & F., each.....

\$ 2 50

\*9186—Ditto, ditto, wooden scale, lacquered, assorted colors, 20 cm., F., per doz. \$3 60; each.....

40

\*9190—Ditto, ditto, scale on polished black wood, R. & F., 30 cm. long a beautiful and correct instrument, each.....

1 75

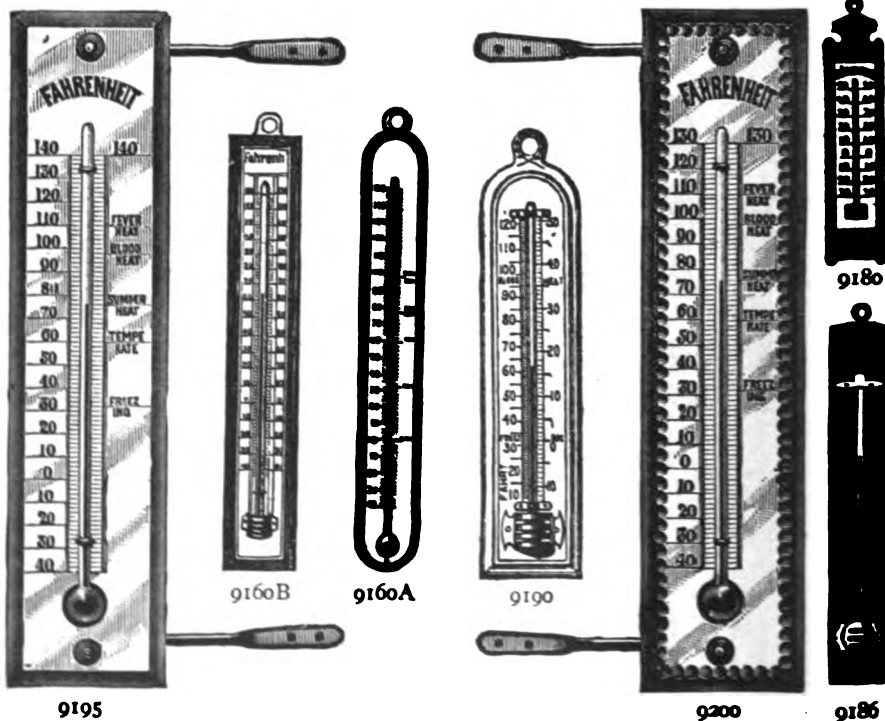
\*9195—Ditto, Window, scale on ground glass plate, with brass fastenings, 30 cm. long, F.....

3 75

\*9200—Ditto, ditto, scale on ground glass plate, with fancy beveled edges, 30 cm., F.....

5 00

REMEMBER OUR DISCOUNT.



### CHEMICAL THERMOMETERS, GUARANTEED TO BE OF THE BEST MAKE:

\*9204/1—**Thermometers, Chemical**, cylindrical, with paper scale, with Celsius scale to 100° and Fahrenheit scale to 212°. (Illustr. p. 418.).

1 10

\*9205—Ditto, Chemical, with milk glass scale, enclosed in glass tube. (Illustr. p. 417.)

Graduated to.....	100° Celsius	200° Celsius.	360° Celsius.
Or graduated to.....	212° Fahrenheit.	400° Fahrenheit.	600° Fahrenheit.
Each.....	\$1 55	1 75	2 20
Per doz.....	17 00	19 25	24 20

\*9210—Ditto, ditto, scale engraved on the stem, with white back, best German make, absolutely accurate. (Illustr. p. 417.)

Graduated to.....	100	200	360° Celsius.
Each.....	\$1 55	1 75	2 20
Per doz.....	17 00	19 25	24 20
Graduated to.....	212	400	600° Fahrenheit.
Each.....	\$1 55	1 75	2 20
Per doz.....	17 00	19 25	24 20

\*9211—**Thermometers, Chemical**, engraved on the stem, with white back, best German make, absolutely accurate; with two scales, registering to 360° Celsius and 600° Fahrenheit..... \$ 3 10

\*9211/1—Ditto, ditto, ditto, with two scales, registering 100° Celsius and 212° Fahrenheit..... 2 20

\*I 9211/4—**Thermometers, Chemical, made of Jena Normal Glass**, with paper scale, enclosed in glass tube. (Illustr. p. 418.)

Graduated to.....	100°	200°	360° Celsius.
Each.....	\$ 1 20	1 50	1 80
Per dozen.....	12 00	15 00	18 00
Graduated to.....	212°	400°	600° Fahrenheit.
Each.....	\$ 1 20	1 50	1 80
Per dozen.....	12 00	15 00	18 00

\*I 9211/5—**Thermometers, Chemical, made of Jena Normal Glass**, with milk glass scale, enclosed in glass tube.

Graduated to.....	100°	200°	360° Celsius.
Each.....	\$ 1 85	2 10	2 60
Per dozen.....	20 00	22 75	28 00
Graduated to.....	212°	400°	600° Fahrenheit.
Each.....	\$ 1 85	2 10	2 60
Per dozen.....	20 00	22 75	28 00

\*I 9211/10—**Thermometers, Chemical, made of Jena Normal Glass**, scale engraved on stem, with white back.

Graduated to.....	100°	200°	360° Celsius.
Each.....	\$ 1 85	2 10	2 60
Per dozen.....	20 00	22 75	28 00
Graduated to.....	212°	400°	600° Fahrenheit.
Each.....	\$ 1 85	2 10	2 60
Per dozen.....	20 00	22 75	28 00

9205  
&  
9211/5

\*9212—**Thermometers, CHEMICAL STANDARD**, engraved on stem, manufactured especially for us of Jena Normal Glass. They are absolutely correct.

	0—100°C.	100—200°C.	200—300°C.	0—100°C.	100—200°C.	200—300°C.
Divided in	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$ degrees.
Each.....	\$4 05	4 05	5 50	5 00	5 00	6 00

For Standard Thermometers, see also No. 9230, etc.

\*9213—**Thermometers, Chemical**, engraved on the stem, with white back. The space above the mercury column is filled with nitrogen, to prevent separation of the latter in using the thermometer for high temperatures. 0—400° Celsius in  $\frac{1}{2}$  degrees; made especially for us of Jena Normal Glass..... 4 35

I 9213/1—**Thermometers, Mercury, registering to 550° Celsius**, made of Jena Normal Glass, which does not become soft below a temperature of 600° Celsius. The capillary tube is enlarged at the upper end and is filled with Carbon Dioxide under pressure of 20 atmospheres to prevent the boiling of the mercury below the temperature given. Engraved on tube; for laboratory or factory use. With zero point and graduation.

1—Graduated from 180° to 550°C. in single degrees.....	16 65
2—Graduated from 100° to 550°C. in single degrees.....	18 25
3—Graduated from 100° to 550°C., division in five degrees.....	13 50

With certificate of the "Physikalisch-Technische Reichsanstalt" \$5 80 extra for each thermometer.

I 9213/2—Ditto, ditto, same as No. 9213/1, but instead of being engraved on tube, the scale is burned in with a porcelain enamel, so that the graduation is not obliterated by usage.

1—Graduated from 180 to 550°C. in single degrees.....	23 15
2—Graduated from 100 to 550°C. in single degrees.....	25 25
3—Graduated from 100 to 550°C., division in five degrees.....	19 00

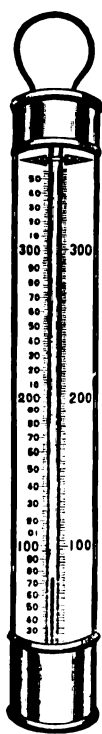
With certificate of the "Physikalisch-Technische Reichsanstalt" \$5 80 extra for each thermometer.

I 9213/3—Ditto, ditto, registering to 550° Celsius, for factory use, engraved on tube.

1—1 Meter long, graduated from 0 to 550°C., division in 5 degrees.....	21 25
2—1½ Meter long, graduated from 0 to 550°C., division in 5 degrees.....	28 35
3—2 Meters long, graduated from 0 to 550°C., division in 5 degrees.....	32 00

9210  
to  
9211/1  
&  
9211/10  
to  
9213

I 9213/4—**Thermometers, Mercury**, made of Jena Normal Glass, which does not become soft below a temperature of 600° Celsius; **registering to 550° Celsius, for factory use, in steel tubes**, with milk glass scale set in and graduation burnt in. Graduation from 0 to 550°C., division in 5 degrees.



9216



9219



9215



9225 to 9229

9204/1, 9211/4  
9220 to 9224

REMEMBER OUR DISCOUNT.

9216

9219

9215

9225 to 9229

9204/1, 9211/4  
9220 to 9224

I 1 1/2 2 Meters long.  
\$36 00 46 00 56 00

I 9214/1—**Thermometer, Beckmann's, divided in 1/100°, for the Freezing Point method; each** \$ 14 85

I 9214/2—**Thermometer, Beckmann's, divided in 1/100°, for the Boiling Point method; each** 14 85

I 9214/3—**Thermometer, Beckmann's, latest form, about 40 cm. long, divided in 1/50°, with graduation according to Kuehn; each** 19 80

I 9214/4—**Thermometer, with graduation according to Kuehn, which can be used for Freezing and Boiling Point methods; each** 20 90

\*9215—**Thermometers, Confectioners', in wooden case, registering up to 500° F.** 2 85

\*9216—**Thermometers, Confectioners', in copper case, registering to 400° or 500° F.** 2 85

\*9219—**Thermometers, Cylindrical Dairy, 20 cm. long; each 50 cts.; per doz.** 5 00

\*9220—**Thermometer, Cylindrical, paper scale enclosed in glass tube, 15 cm. long, to 130° F.; each 50 cts., per doz.** 5 00

\*9221—**Ditto, ditto, ditto, 15 cm. long, R. & F.; each 60 cts.; per doz.** 6 00

\*9222—**Thermometers, Cylindrical, paper scale enclosed in glass tube; to 212° F.**  
Each..... 20 cm. 25 cm. 30 cm.  
Per doz..... \$0 60 75 90  
6 00 7 50 9 00

\*9223—**Ditto, ditto, ditto, 30 cm. long, R. & F. scales; registering to 212° F.; each \$1 00; per doz.** 10 00

\*9223/1—**Ditto, ditto, ditto, to about 130° Fahrenheit, 30 cm. long; each 85 cts.; per doz.** 8 50

\*9224—**Ditto, ditto, ditto, Chemical, best German make; they are more slender than shown on illustration.**  
Registering to..... 212 400 600° Fahrenheit.  
Each..... \$1 00 1 25 1 50  
Registering to..... 100 200 360° Celsius.  
Each..... \$1 00 1 25 1 50

\*9225—**Ditto, ditto, milk glass scale enclosed in glass tube, with brass cap, 15 cm. long; to 130° F., each 90 cts.; per doz.** 9 00

\*9226—**Ditto, ditto, ditto, 15 cm. long, R. & F.; each 95 cts.; per doz.** 9 50

\*9227—**Ditto, ditto, ditto, 25 cm. long, to 212° F.; each \$1 25; per doz.** 13 50

\*9228—**Ditto, ditto, ditto, 25 cm. long, to 212° F. and 80° R.; each \$1 65; per doz.** 18 00

\*9229—**Ditto, ditto, ditto, 30 cm. long, to 130° F.; each** 2 10

I 9230—**Ditto, ditto, ditto, Normal Thermometers, made of Jena Normal Glass.**

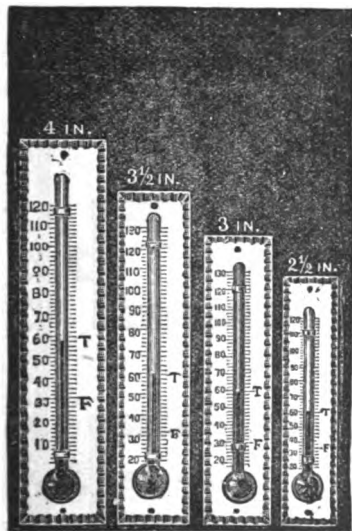
0 to 100° 0 to 200° 100 to 200° 200 to 300° Celsius.  
Divided in 1/10 \$4 65 7 50 4 65 6 00  
Divided in 1/5 4 30 7 00 4 30 5 65

- 9231—**Thermometers, Cylindrical, milk glass scale, enclosed in glass tube, same as No. 9230. Normal Thermometers, made of Jena Normal Glass, to 212° Fahrenheit, divided in  $\frac{1}{2}$  degrees.** \$ 4 65
- I 9232—**Thermometers, Normal, according to Anschuetz, length 10 to 15 cm., diameter about 5 to 6 mm.**

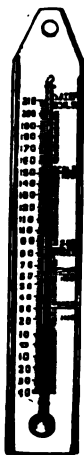
	No. 1	2	3	4	
	—10 to 60°	40 to 110°	90 to 160°	150 to 220°	Celsius.
Divided in $\frac{1}{2}$ degrees; each	\$6 75	6 75	6 75	7 10	
Divided in $\frac{1}{4}$ degrees; each	7 50	7 50	7 50	8 25	
Divided in $\frac{1}{8}$ degrees; each	8 25	8 25	8 25	8 65	
	No. 5	6	7		
	200 to 265°	250 to 310°	300 to 360°	Celsius.	
Divided in $\frac{1}{2}$ degrees; each	\$8 25	9 35	10 50		
Divided in $\frac{1}{4}$ degrees; each	9 00	10 10	11 25		
Divided in $\frac{1}{8}$ degrees; each	9 75	10 90	12 00		
Set of 7 in fine case, graduated in single degrees					38 50
Set of 7 in fine case, graduated in $\frac{1}{2}$ degrees					41 80
Set of 7 in fine case, graduated in $\frac{1}{4}$ degrees					49 50

**For Normal Thermometer, see also No. 9212.**

- \*9235—**Thermometers, Cylindrical, paper scale enclosed in glass tube, the whole in wooden frame, with handle; to 120° F., for bathing, 30 cm. long; each** 50
- \*9236—**Ditto, ditto, ditto; to 212° F., 50 cm. long; each** 1 00
- \*9237—**Ditto, ditto, for Ice Machines, to be used for brine; paper scale enclosed in glass tube, the whole in wooden frame with handle, registering from 30° below Zero to 212° above Zero Fahrenheit; 30 cm. long; each \$1 00; per doz.** 11 00



9239



9245 &amp; 9255



9235 to 9237

- \*9239—**Thermometers, for decorative art and fancy work, loose, not on cards.**
- |           |         |       |       |       |       |       |       |       |         |
|-----------|---------|-------|-------|-------|-------|-------|-------|-------|---------|
| Length    | 50      | 63    | 76    | 89    | 100   | 114   | 127   | 152   | 178 mm. |
| Each      | \$ 0 16 | 16    | 18    | 18    | 20    | 20    | 25    | 25    | 30      |
| Per doz.  | 1 50    | 1 50  | 1 65  | 1 65  | 1 75  | 1 75  | 1 90  | 1 90  | 2 50    |
| Per gross | 15 00   | 15 00 | 16 25 | 16 25 | 17 50 | 17 50 | 18 75 | 18 75 | 25 00   |

9240—**Ditto, Dairy, in tin cases; fig. 9295 and 9296; F.**

	7 in.	8 in.	10 in.
	— 18 cm.	20 cm.	25 cm.
Each	\$0 30	35	40
Doz.	2 50	3 00	3 50

\*9245—**Ditto, Flange, Dairy; F.**

	7 in.	8 in.	10 in.
	— 18 cm.	20 cm.	25 cm.
Each	\$0 35	40	45
Doz.	3 00	3 50	4 00

9250, etc.—**Ditto, Differential, Leslie's. See Catalogue of Physical Apparatus.**

- \*9255—**Thermometers, Flange Evaporator, registering to 400° F., extra heavy and very durable; each \$3 25, doz.** 33 00

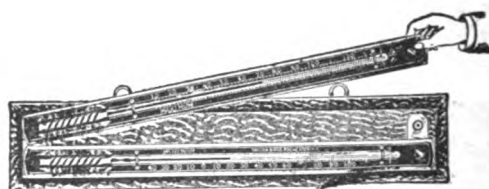
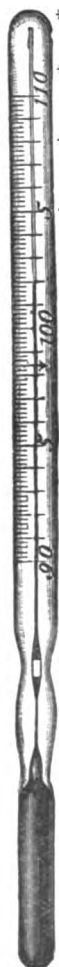
**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*9260/1—**Thermometer, Fever, (clinical)**, 10 cm. long, self-registering, with indestructible index and magnifying lens, in hard rubber case. The most sensitive and the only reliable fever thermometer, offered at a reasonable price. Per gross \$125 00; per doz. \$12 50; each..... \$ 1 25

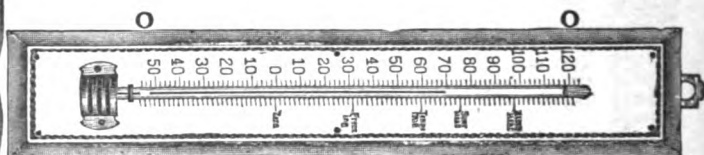
The gross price will be charged in lots of three dozen or more. If desired we furnish our certificate of correction with each instrument.

- \*9261—Ditto, ditto, ditto, with indestructible index and with Fahrenheit and Celsius scales; each..... 2 00
- \*9264—**Thermometers, Fever, (clinical)**, self-registering, with indestructible index, in gilt case, with hook and chain. Per gross \$165 00; per dozen \$16 50; each..... 1 75
- \*9264/1—Ditto, ditto, with indestructible index and magnifying lens, in gilt case, with hook and chain. Per gross \$215 00; per dozen \$21 50; each..... 2 25
- \*9265—Ditto, ditto, self-registering, Hicks' patent, lens front, indestructible index; per doz. \$26 50; each..... 2 50

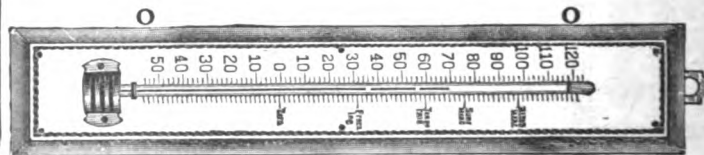
REMEMBER OUR DISCOUNT.



9267/2



9266



9267



9268

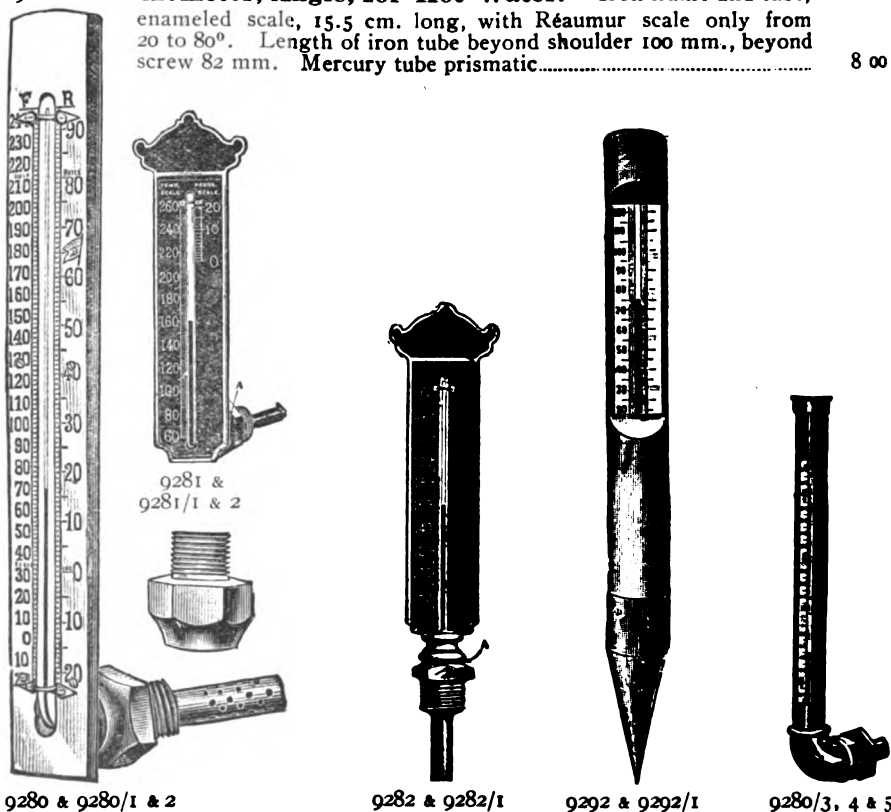
9260/1  
to 9265

- \*9266—**Thermometers, Maximum**, self-registering, on beveled hardwood frame, 25 cm. long, each..... 1 85
- I 9266/3—**Thermometers, Maximum**, engraved on stem. 0 to 100° C in 1° \$2 65; 0 to 100° C in 1/2°..... 3 30
- \*9267—**Thermometers, Minimum**, self-registering, on beveled hardwood frame, 25 cm. long, each..... 1 85
- 9267/1—**Thermometers, Maximum and Minimum**, self-registering; No. 9266 and 9267 on one hardwood frame, 25 cm. long, each..... 3 75
- \*9267/2—**Thermometers, Maximum and Minimum**, 30 cm. long. Each tube mounted on separate plate, attached at upper end with small thumb screw, so that thermometers may be reset as indicated in illustration..... 6 65
- \*9268—**Thermometers, Sixes'**, self-registering Maximum and Minimum, 30 cm. porcelain scale in gray enameled tin case. The most reliable instrument of this kind made, each..... 6 25



- \*9280—**Thermometer, Iron Frame Angle.** Length of scale 28 cm., graduated F. and R. to 220° F., 25 mm. (1 inch) pipe thread on separable hexagon connecting nut, length of tube beyond shoulder of nut not to exceed 10 cm. .... \$ 10 00
- \*9280/1—Ditto, ditto, same as No. 9280; length of tube beyond shoulder of nut not to exceed 20 cm. .... 13 50
- \*9280/2—Ditto, ditto, same as No. 9280; length of tube beyond shoulder of nut not to exceed 30 cm. .... 18 00
- \*9280/3—**Thermometer, Brass Cylindrical Frame Angle,** with jam nut; length above elbow 25 cm., graduated not to exceed 600° F., 25 mm. (1 inch) pipe thread connection, length of tube beyond shoulder of hexagon nut not to exceed 10 cm. .... 12 00
- \*9280/4—Ditto, ditto, same as No. 9280/3, length of tube not to exceed 20 cm. .... 16 50
- \*9280/5—Ditto, ditto, same as No. 9280/3, length of tube not to exceed 30 cm. .... 21 00
- \*9281—**Thermometer, Angle, for Hot Water.** Iron frame and tube, enameled scale, 15.5 cm. long, with Réaumur scale only from 20 to 80°. Length of iron tube beyond shoulder 100 mm., beyond screw 82 mm. Mercury tube prismatic. .... 8 00

REMEMBER OUR DISCOUNT.



- \*9281/1—**Thermometer, Angle, for Hot Water;** frame separable at "A"; length of face 20 cm., length of thread and bulb chamber 50 mm. .... 6 65
- \*9281/2—**Thermometer; Angle Stem Steam Heating Thermometer,** same as No. 9281/1, graduated to show 20 lbs. (9 kilos) pressure.... 7 50
- \*9282—**Thermometer, Straight Stem Hot Water,** length 29 cm. .... 6 00
- \*9282/1—**Thermometer; Straight Stem Steam Heating Thermometer;** same as No. 9282, graduated to show 20 lbs. (9 kilos) pressure .... 6 75

**ANY OTHER THERMOMETERS FURNISHED TO ORDER AT LOWEST PRICES!**

- \*9292—**Thermometers, Hot-Bed,** medium grade; 25 cm. glass cylindrical thermometer with paper scale, in round turned wood case, with brass pointed bottom. (Illustration does not show the handle).... 3 00
- \*9292/1—Ditto, **standard grade;** 25 cm. metal scale, mounted on round turned wood frame with brass pointed bottom. (Illustration does not show the handle)..... 5 00

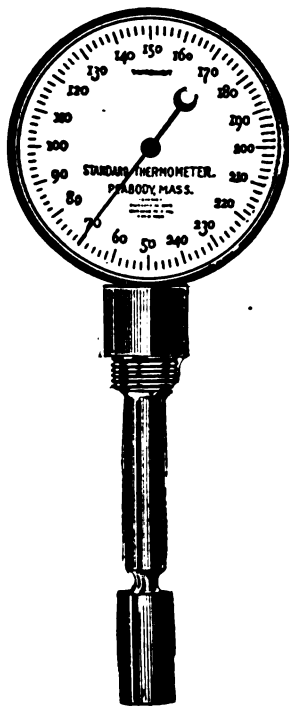


**\*9295—Thermometers, in japanned tin case, Fahrenheit scale.**

	7 in. = 18 cm.	8 in. = 20 cm.	10 in. = 25 cm.	12 in. = 30 cm.
Each.....	\$0 24	26	30	36
Doz.....	2 00	2 20	2 60	3 20

**\*9296—Thermometers, in japanned tin case, with Réaumur and Fahrenheit scales.**

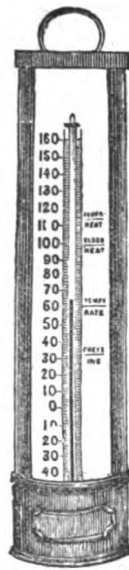
	7 in. = 18 cm.	8 in. = 20 cm.	10 in. = 25 cm.	12 in. = 30 cm.
Each.....	\$0 50	55	60	75
Dozen.....	\$4 00	4 50	5 30	6 60

**\*9300—Thermometers, for fastening in corner of window outside; in walnut case, 20 cm. long; each \$0 70; per doz ..... \$ 7 00**

9301 to 9301/4



9300



9295 &amp; 9296

**\*9301—Thermometers, Standard, for Mechanical Use No. 45.**  
Brass Case and Extension. 10 cm. Metal Dial. 11.4 cm. Extension.  
19 mm. (= ¾ inch) Pipe Thread.

	50 to 250°	100 to 300°	0 to 400° Fahrenheit.
Each.....	\$15 00	15 00	15 00

**\*9301/1—Ditto, ditto, No. 43.** 10 cm. Metal Dial. 5 cm. Extension. 19 mm.  
(= ¾ inch) Pipe Thread.

	50 to 250°	100 to 300°	0 to 400° Fahrenheit.
Each.....	\$9 00	9 00	9 00

**\*9301/2—Ditto, ditto, No. 25.** 10 cm. Metal Dial. 15 cm. Extension. 19 mm.  
(= ¾ inch) Pipe Thread.

	100 to 300°	50 to 250°	—50 to 150° Fahrenheit.
Each.....	\$18 25	18 25	18 25

**\*9301/3—Ditto, ditto, No. 15.** 15 cm. Metal Dial. 15 cm. Extension. 19 mm.  
(= ¾ inch) Pipe Thread.

	100 to 300°	50 to 250°	—50 to 150° Fahrenheit.
Each.....	\$25 00	25 00	25 00

**\*9301/4—Ditto, ditto, No. 5.** 15 cm. Metal Dial. 15 cm. Extension. 25.4 mm.  
(= 1 inch) Pipe Thread.

	100 to 300°	50 to 250°	—50 to 150° Fahrenheit.
Each.....	\$26 50	26 50	26 50

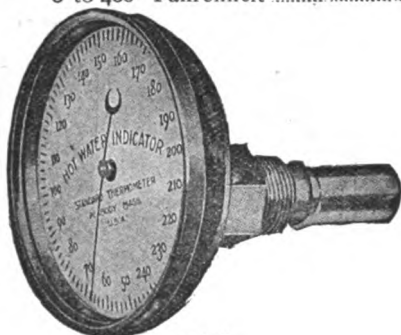
**\*9301/12—Ditto, ditto, No. 42.** 10 cm. Metal Dial. 5 cm. Extension.  
19 mm. (= ¾ inch) Pipe Thread. (Illustr. p. 424.)

	50 to 250°	100 to 300°	0 to 400° Fahrenheit.
Each.....	\$7 25	7 25	7 25

**APPROXIMATE EQUIVALENTS:**

1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

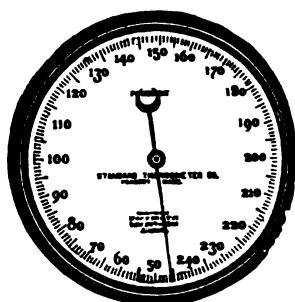
- \*9301/13—Thermometers, Standard, for Mechanical Use No. 44.**  
10 cm. Metal Dial. 11.4 cm. Extension. 19 mm. (=  $\frac{3}{4}$  inch) Pipe Thread.  
50 to 250° 100 to 300° 0 to 400° Fahrenheit.  
Each..... \$13 50 13 50 13 50
- \*9301/14—Ditto, ditto, No. 31.** 10 cm. Metal Dial. 15 cm. Extension.  
19 mm. (=  $\frac{3}{4}$  inch) Pipe Thread.  
0 to 400° 50 to 250° -50 to 150° Fahrenheit.  
Each..... \$18 25 16 75 16 75
- \*9301/15—Ditto, ditto, No. 20.** 15 cm. Metal Dial. 15 cm. Extension.  
19 mm. (=  $\frac{3}{4}$  inch) Pipe Thread.  
0 to 400° 50 to 250° -50 to 150° Fahrenheit.  
Each..... \$25 00 23 50 23 50
- \*9301/16—Ditto, ditto, No. 10.** 15 cm. Metal Dial. 15 cm. Extension.  
25.4 mm. (= 1 inch) Pipe Thread.  
0 to 400° 100 to 500° 50 to 250° -50 to 150° Fahrenheit.  
Each \$26 50 28 25 25 00 25 00
- 9301/20—Ditto, ditto, No. 34.** 12.7 cm. Extension. Special Thread. Protecting Brass Shell over extension, perforated over lamina.  
0 to 400° Fahrenheit ..... \$ 26 75



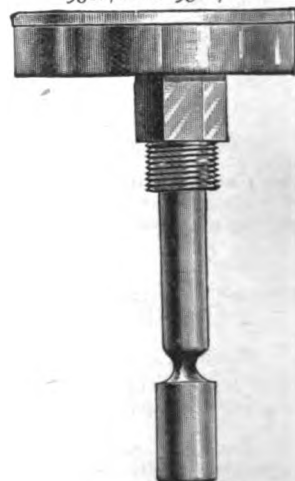
9301/26



9301/25



9301/12 to 9301/16



9301/12 to 9301/16

- \*9301/25—Thermometers, Standard, for Mechanical Use No. A48.**  
10 cm. Enamel Dial.  
50 to 250° 100 to 300° 0 to 400° -50 to 150° 0 to 200° Fahrenheit.  
Each.... \$7 25 9 00 9 00 7 25 7 25
- \*9301/26—Ditto, ditto, No. A42.** 10 cm. Enamel Dial. 5 cm. Extension.  
19 mm. (=  $\frac{3}{4}$  inch) Pipe Thread.  
50 to 250° 100 to 300° 0 to 400° -50 to 150° 0 to 200° Fahrenheit.  
Each.... \$5 75 7 25 7 25 5 75 5 75

REMEMBER OUR DISCOUNT.

**\*9301/30—Thermometer, Standard Recording No. 300.** Made with 24 hour or 8 day clocks, and dials giving 24 hour or 7 day records. Instead of the Glazed Door shown, a door of solid metal clamped into place over a gasket can be had; the latter form is valuable for damp places or submerged use. A perforated cap over the lamina gives greater sensitiveness. Extensions **can be made** of any length up to 76 cm. Case can be padlocked if desired. Maximum temperature range is 500° Fahrenheit. In ordering state proposed use, range and style.

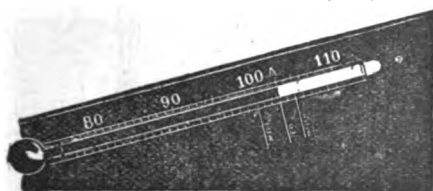
No. 300—Daily Dial, glass door, 15 cm. Extension, solid cap.....	55 00
No. 301—Weekly Dial, glass door, 15 cm. Extension, solid cap.....	65 00
No. 302—Daily Dial, solid door, gaskets and clamp, 15 cm. Extension	58 25
No. 303—Weekly Dial, solid door, gaskets and clamp, 15 cm. Extension	67 75
No. 304—Daily Dial, glass door, perforated cap, 15 cm. Extension.....	56 50
No. 305—Weekly Dial, glass door, perforated cap, 15 cm. Extension..	66 25
Additional length of extension, per cm. extra.....	65
For ranges above 300° F., extra.....	10 00
For steel or iron caps, extra.....	6 25



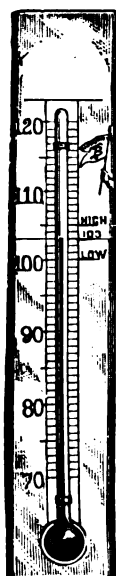
9315  
9320  
9325  
9330  
9332



9301/30



9303/2



9303



9302

**\*I 9302—Thermometer, for ascertaining the temperature of soils at various depths,** mounted in metal case, with borer; graduated 0 to 60° in  $\frac{1}{16}^{\circ}$ .

Length of body below handle..... 0.5      1      2      3 Meters.  
Each ..... \$20 00    24 00    32 00    40 00

**\*9303—Thermometers, Incubator,** 15 cm. long, silvered or oxidized metal scale, graduated from 90° to 110°; very sensitive and accurate; per dozen \$12.00; each.....

9303/1—Ditto, ditto, same as No. 9303, 10 cm. long; per dozen \$12.00; each....

**\*9303/2—Ditto, ditto, 10 cm. long, with tube set at angle on scale; per dozen \$14.00; each.....**

9303/3—Ditto, ditto, 15 cm. long, polished wood, scale graduated from 90° to 110°; per dozen \$12.00; each.....

9310—Tiles, of Clay, for Bunsen's Combustion Furnace; doz.....

9313—Tips of platinum for blow-pipes (see No. 3111). ....

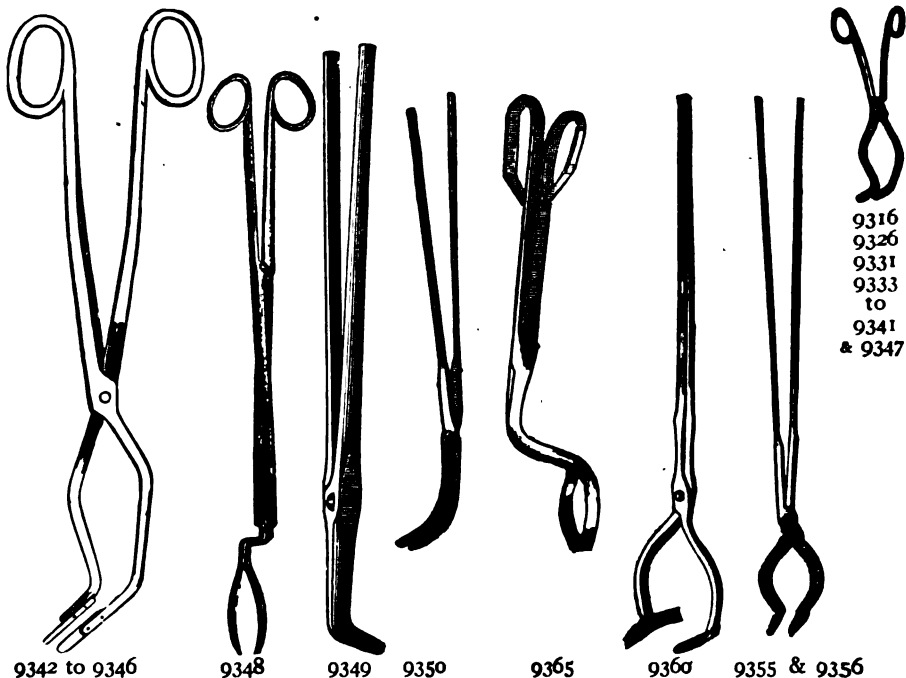
9314—Tips of brass for blow-pipes (see No. 3100).....

**\*9315—Tongs, Crucible, of black wrought iron, single bent, 23 cm. long; each 60 cts.; per doz.....**

6 75

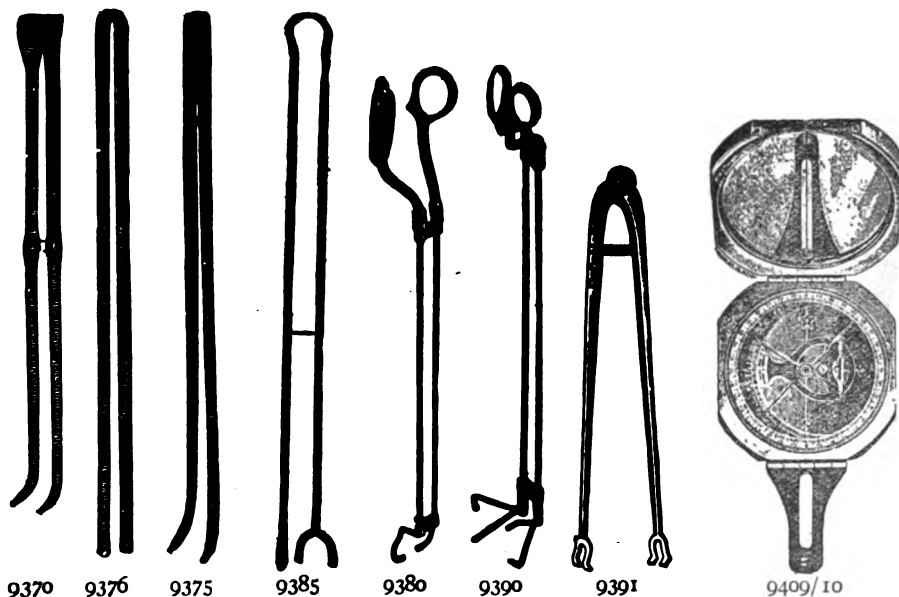
*9316—Tongs, Crucible, of black wrought iron, double bent, 23 cm. long; each 60 cts.; per doz.....	\$ 6 95
*9320—Ditto, ditto, of polished wrought iron, single bent, 23 cm. long; (Illustr. p. 425); each.....	80
*9325—Ditto, ditto, of polished forged steel, single bent, 20 cm. long; (Illustr. p. 425); each.....	90
*9326—Ditto, ditto, of polished forged steel, double bent, 20 cm. long; each.....	1 00
*9330—Ditto, ditto, of forged steel, nickel-plated, single bent, 20 cm. long; (Illustr. p. 425); each.....	1 00
*9331—Ditto, ditto, ditto, double bent, 20 cm. long; each.....	1 10
*9332—Ditto, ditto, ditto, single bent, 26 cm. long; (Illustr. p. 425); each.....	1 45
*9333—Ditto, ditto, ditto, double bent, 26 cm. long; each.....	1 55
*9335—Ditto, ditto, of polished brass, double bent, 23 cm. long; each.....	1 25
*9340—Ditto, ditto, of german silver, double bent, 20 cm. long; each.....	1 75
*9341—Ditto, ditto, of pure wrought nickel, double bent, 20 cm. long; each.....	4 00

REMEMBER OUR DISCOUNT.



*9342—Tongs, Crucible, of pure wrought nickel, double bent, 20 cm. long with heavy platinum plates. Price according to weight of platinum in addition to price of No. 9341.	
*9345—Ditto, ditto, of steel, nickel-plated, double bent, 20 cm. long, with heavy platinum plates. Price according to weight of platinum in addition to price of No. 9331.	
*9346—Ditto, ditto, of german silver, double bent, 20 cm. long, with heavy platinum plates. Price according to weight of platinum in addition to price of No. 9340.	
*9347—Ditto, ditto, of german silver, double bent, 20 cm. long, with platinum caps instead of plates; each.....	8 50
*9348—Ditto, ditto, Blair's, with heavy platinum shoes. Price according to weight of platinum used. Usually made at \$15 00 each.	
*9349—Tongs, Crucible, of malleable iron. No. 1; 30 cm. No. 2; 43 cm. long.	
Each.....	\$0 60 75
*9350—Ditto, ditto, of wrought iron, single bent.	
Each.....	40 cm. 60 cm. 90 cm. \$1 10 1 45 1 75

*9355—Tongs, Crucible, of wrought iron, double bent, light, 80 cm. (Illustr. p. 426.)	\$ 1 90
*9356—Ditto, ditto, ditto, double bent, heavy, 80 cm. (Illustr. p. 426.)	2 20
*9360—Ditto, ditto, ditto, double bent, for lifting heavy crucibles vertically. (Illustr. p. 426.)	2 50
*9365—Ditto, ditto, ditto, scissor shape. (Illustr. p. 426.)	3 15
*9370—Tongs, Cupel, of steel, with guide	1 25
*9375—Ditto, ditto, ditto, without guide	1 15
*9376—Ditto, ditto, ditto, without guide	1 10
*9377—Ditto, ditto, ditto, with flat rounded ends	1 55
*9380—Ditto, ditto, ditto, Judson's	3 30
*9385—Ditto, Scorifier, of steel	1 25
*9390—Ditto, ditto, Judson's, arranged to lift out scorifiers from the rear without disturbing those in front.	3 30



**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*9391—Tongs, Scorifier, Fletcher's, malleable iron, new pattern, 44 cm. long; each.

I 20

**Tool Chests furnished in any size and quality at lowest prices!**

9400—Towels, for the laboratory.	No. 1	2
Each	\$0 30	35
Doz.	3 00	3 75

\*9409/10—Transit; Brunton Patent Pocket Transit. A Pocket Instrument which takes the place of a Sighting Compass, Clinometer, Prismatic Compass and Abney Level or Locke Level. This instrument has been especially designed to meet the requirements of civil and mining engineers, mine managers and geologists, its size and peculiar features adapting it to preliminary surveys, both underground

and on the surface, taking topography, geological field work and, in short, any purpose for which a light pocket instrument is desirable, and where a moderate degree of accuracy will suffice. Case of aluminium 70x70x26 mm. Weight 220 grammes. Patented September 18th, 1894.

Dimensions packed for domestic shipment 9x9x4 cm. Dimensions packed for export 9.5x9.5x4.5 cm.

**Price** ..... \$ 41 65

- \*9410/1—**Trays, Photographic, made of glass.** They have raised knobs inside to prevent suction of the plates.

11.4x14 cm. 14x21.6 cm. 17.8x22.9 cm. 20.3x25.4 cm.

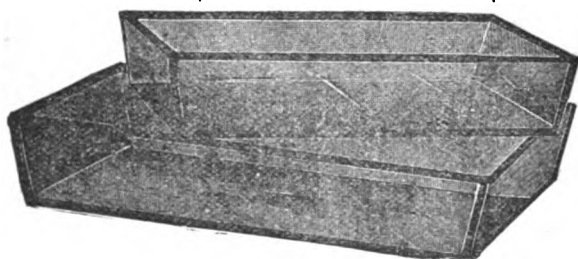
Each..... \$0 40 60 1 00 1 25

- 9410/2—**Trays, Photographic,** made of opal glass, very strong, flat inside, fancy bottom, 19x28.5 cm

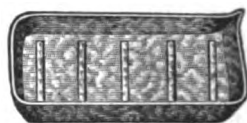
1 25

- \*9411/1—**Trays, Photographic, of Polished Hard Rubber.** The glass negative lays flat on the bottom of the tray, necessitating the least possible quantity of developer, and the depressed channel in bottom of tray is sufficiently deep to allow the finger or plate-lifter to engage firmly underneath the plate and remove it without risk of scratching.

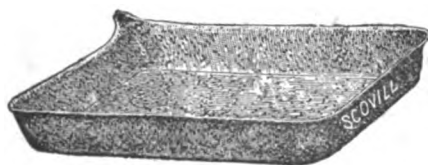
11x14.5 14x21.5 18x23 21.5x26.5 cm.  
Each..... \$0 60 1 00 1 40 2 10



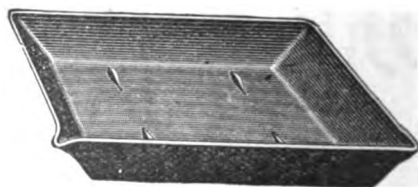
9410/1



9412/1



9413



9411/1



9412/2

- \*9412/1—**Trays, Photographic, steel, enameled like granite,** 38x23x 4.5 cm.; per doz. \$23.00; each .....

2 10

- \*9412/2—**Trays, Photographic, Austrian.** They are pressed out of sheet steel—underglazed—then quadruple coated with porcelain outside and inside. The trays vary in depth from 2.5 cm. for the smallest to 7.5 cm. for the largest.

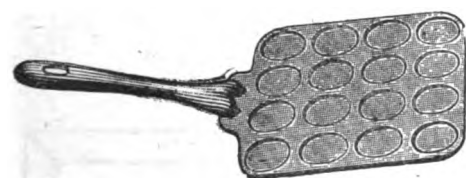
10x12.5 12.5x18 18x23 20x25 25x30 28x35  
Each..... \$0 40 83 1 25 2 05 2 90 3 75  
35x43 40x50 45x55 50x60 55x68  
Each .. \$6 25 7 50 10 00 11 65 15 00

- \*9413—**Trays, Photographic, Porcelain.** The dimensions given are for inside the bottom of the tray.

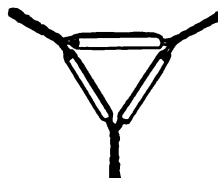
Size ..... 14x21 5 18x23 20x25 25x30 28x35 35x43 40x50 48x58.5 50x60 cm.  
Shallow \$1 00 1 10 1 35 2 20 3 60 8 50 10 45 19 30 21 45  
Deep..... 1 25 1 35 1 65 2 75 4 40 11 00 13 30 24 15 26 65

REMEMBER OUR DISCOUNT.

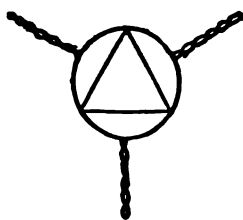
9420—Tray, for coal, japanned, for blow-pipe use.....	\$ 0 50
9421—Ditto, for dirt, japanned, for blow-pipe use.....	45
*9422—Tray for Cupels, of iron, holding 16 cupels, with detachable handle.....	1 25
9429—Triangles, of glass, according to size, 13 cents to.....	30
*9430—Ditto, of iron, plain; each 6¼ cents; dozen.....	62
*9431—Ditto, ditto, covered with clay tubes; each 12½ cents; dozen.....	1 00
*9431/1—Triangles, of iron, with pipe stems, which have projections, so that the flame reaches almost the entire surface of the crucible, small, medium and large; each 12 cents; dozen.....	1 13
9432—Ditto, of iron, with round center, for making Fresenius' Triangles No. 9440.	
Each..... 55 mm. and 63 mm. diameter.	
Each..... \$0 15 20	
*9434—Triangles, of pure nickel wire.	
Length of side..... 4 5 6 7 8 10 cm.	
Each..... \$0 19 25 31 40 50 56	
*9440—Ditto, of platinum, fitted in a larger one of iron, Fresenius', small and large. Platinum at lowest market price, with an additional charge for making each triangle of 50 cts. and iron triangle at 20 cts.	



9422

9430  
9434  
9445

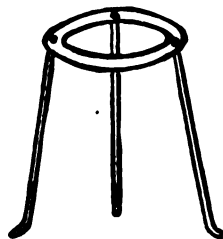
9431



9440



9465



9450, 9455, 9460 &amp; 9461



9431/1

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*9445—Triangles, of platinum, solid.

Of No. 16 wire, side of triangle 30 mm., approximate weight,	5.6 grammes.
Of No. 16 wire, side of triangle 35 mm., approximate weight,	6.7 grammes.
Of No. 16 wire, side of triangle 40 mm., approximate weight,	7.8 grammes.
Of No. 16 wire, side of triangle 45 mm., approximate weight,	9.0 grammes.
Of No. 15 wire, side of triangle 50 mm., approximate weight,	12.0 grammes.
Of No. 15 wire, side of triangle 55 mm., approximate weight,	13.2 grammes.
Of No. 15 wire, side of triangle 60 mm., approximate weight,	14.3 grammes.
Of No. 15 wire, side of triangle 65 mm., approximate weight,	15.5 grammes.

Triangles of any size and thickness made to order at lowest market price.

*9450—Tripod, of iron, 15 cm. high; per doz. \$3.55; each.....	30
9451—Ditto, ditto, 15 cm. high, squat shape; per doz. \$3.90; each.....	36
*9455—Ditto, ditto, 17.8 cm. high; per doz. \$4.60; each.....	40
*9460—Ditto, ditto, 20 cm. high; per doz. \$5.00; each.....	45
*9461—Ditto, ditto, 20 cm. high, heavy; each.....	50
*9465—Ditto, ditto, heavy, 20 cm. high, with two rings; each.....	55
*9470—Ditto, ditto, 18 cm. high, with three rings; each.....	65

9471—Tripod, of iron, 23 cm. high, with three rings; each.....	\$ 0 80
9475—Ditto, ditto, 20 cm. diameter; each.....	65
9476—Ditto, ditto, 20 cm. diameter, with four rings; each.....	1 00
9480—Ditto, ditto, 25 cm. diameter; each.....	1 05
*9482—Ditto, ditto, 25 cm. diameter, with five rings; each.....	1 50
9483—Ditto, ditto, 30 cm. diameter.....	1 35
9484—Ditto, ditto, 30 cm. diameter, with six rings.....	1 65
9484/1—Ditto, ditto, <b>extra heavy</b> , with points where the feet are fastened, 21.5 cm. high; each.....	55
*9485—Ditto, of Russian sheet iron, with movable legs. 12.5 15 18 cm. high. Each.....	\$0 50 65 75

\*9490—Troughs, Pneumatic, of Berlin porcelain.

No.	1	2
Holding.....	4 kilos	8 kilos of mercury.
	\$1 25	2 35

\*9491—Ditto, ditto, ditto, in shape of a cross, holding about 2.7 kilos of mercury. 1 12

\*9495—Troughs, Pneumatic, of Bohemian glass.

Length.....	20	20	25	30	37.5 cm.
Height.....	10	13.5	13.5	13.5	13.5 cm.
Width.....	10	10.5	13	15.5	18 cm.
Each.....	\$2 50	3 00	3 75	5 40	7 50

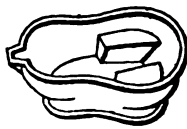
REMEMBER OUR DISCOUNT.



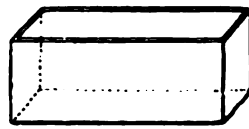
9482



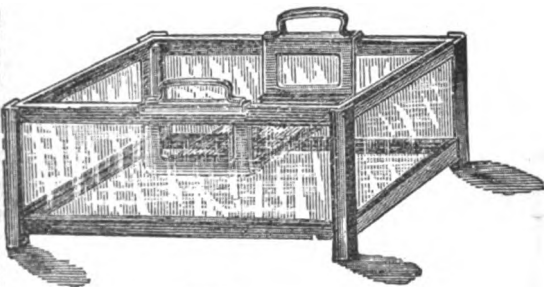
9485



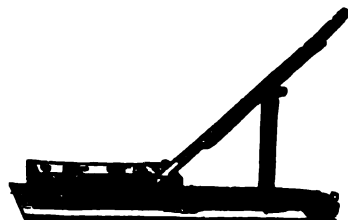
9490



9495



9500



9505



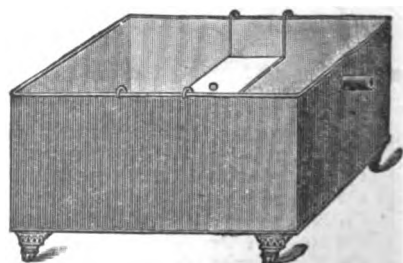
9511



9491



9506



9510

\*9500—Troughs, Pneumatic, of heavy plate glass, in polished brass frame, with sliding shelf, 18x16.5x33 cm. 20 00

\*9505—Ditto, ditto, Bunsen's, for gasometry; of wood, with glass trough and support for eudiometer. 9 35

\*9506—Ditto, ditto, **Griffin's**, of iron, set in a wooden frame. 12 00

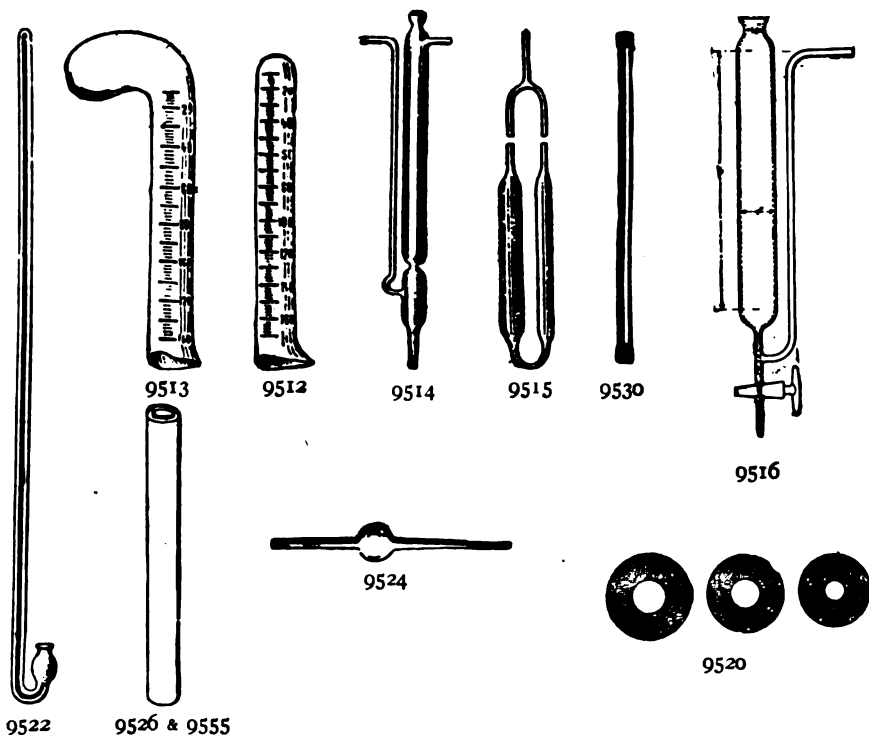
\*9510—Ditto, ditto, of metal, **japanned**, with sliding shelf and overflow. 13x18x25 13x23x30 13x28x38 20x30x45 30x30x40 cm.

Each \$1 85 2 50 2 70 4 35 5 00

\*9511—Tubes, Absorption, Babo's, filled with glass beads. 1 50



*9512— <b>Tubes, Absorption</b> , Bunsen's straight, graduated.....	\$ 1 25
9512/1—Ditto, <b>Absorption</b> , Bunsen's, straight, without graduation.....	25
*9513—Ditto, <b>Absorption</b> , Bunsen's, with bulb, graduated.....	1 55
9513/1—Ditto, <b>Absorption</b> , Bunsen's, with bulb, without graduation.....	45
*9514—Ditto, <b>Absorption</b> , Emmerling's, filled with glass beads.....	1 55
*9515—Ditto, <b>Absorption</b> , Soxhlet-Winkler.....	60
*9516—Ditto, <b>Absorption</b> , Camp's; each.....	3 50
<b>Tubes, for arsenic reductions. See No. 2450.</b>	
*9520—Ditto, <b>Barometer</b> , 95 cm. long, open at both ends; per kilo.....	2 00
9521—Ditto, ditto, 95 cm. long, sealed at one end, <b>of well annealed glass</b> ; each.....	44
*9522—Ditto, ditto, 87 cm. long, with bulb, <b>of well annealed glass</b> ; each.....	55
*9524—Ditto, <b>Bulb</b> , of German glass, with one bulb in the center.....	20



\*9526—**Tubes, Combustion, of Berlin porcelain, glazed inside and outside, plain.**

<b>Length</b> .....	30	40	50	65	75	100 cm.
<b>Inside diameter</b> .....	20	20	20	20	20 mm.	
<b>Each</b> .....	\$0 75	1 25	2 00	3 00	3 75	
<b>Inside diameter</b> .....	25	25	25	25	25 mm.	
<b>Each</b> .....	1 00	1 65	2 35	3 35	4 00	
<b>Inside diameter</b> .....	30	30	30	30	30	30 mm.
<b>Each</b> .....	1 10	2 10	3 00	4 50	5 50	8 00
<b>Inside diameter</b> .....					40	40 mm.
<b>Each</b> .....					7 00	10 00
<b>Inside diameter</b> .....						50 mm.
<b>Each</b> .....						14 00

**Length 50 cm., inside diameter 15 mm.; each.**

1 75

\*9530—Ditto, ditto, of Meissen porcelain, glazed inside, flanged, length 65 cm. No. 1 2 3  
Inside diameter..... 35 25 18 mm.

\$2 35

1 85

1 55

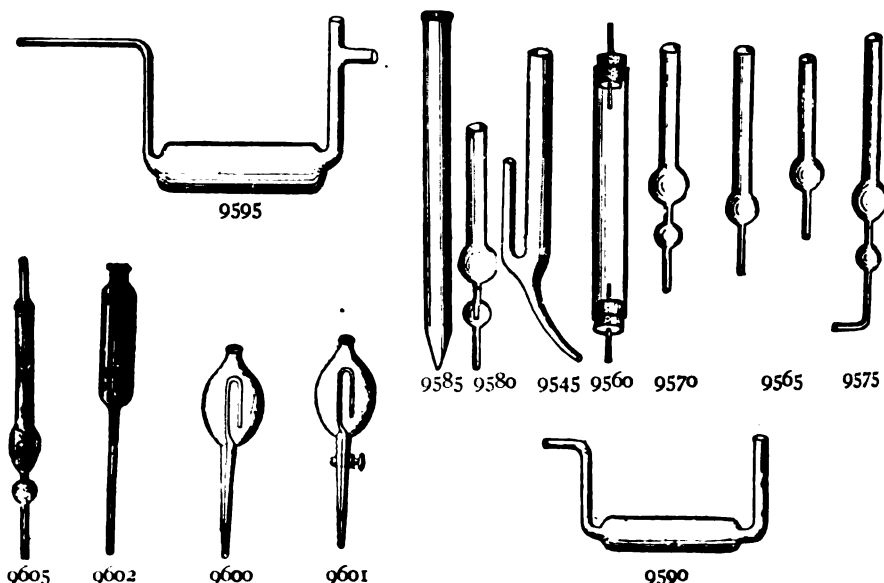
\*9531—**Tubes, Combustion, of Platinum.** Usual size: 12.7 mm. inside diameter; from 25 to 76 cm. long; weight from 50 to 200 grms.; with ground joint; all platinum, or collar of german silver.

**Any shape or size made to order at lowest market price!**

9531

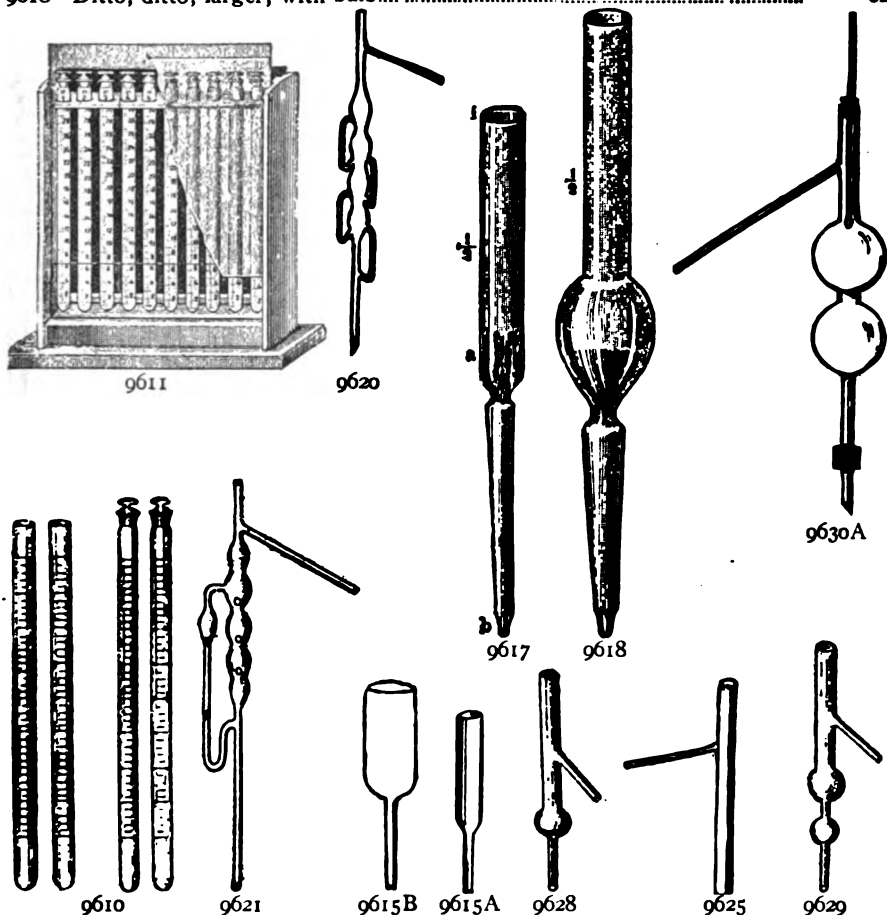
<b>9535—Tubes, Glass, bent, for gas bottles, see fig. 1841.</b>					
For.....	250 and 350 cc.	500 cc.	1 lit.	2 lit. bot.	
Per pair.....	\$0 25	30	35	40	
<b>9540—Ditto, ditto, for washing bottles, see fig. 3470 and 3470/1.</b>					
For.....	250 and 350 cc.	500 cc.	1 lit.	2 lit. bot.	
Per pair.....	\$0 20	25	28	30	
<b>*9545—Ditto, ditto, (edulcorating tubes) Berzelius'</b>					<b>\$ 0 25</b>
<b>9550—Ditto, Capillary, assorted; per kilo \$3 10; per hecto.</b>					<b>35</b>
<b>*9555—Ditto, of Refractory French Clay; (Illustr. p. 431); length 60 cm.</b>					
Diameter.....	20	25	30	35 mm.	
	\$1 40	1 50	1 80	2 50	
<b>*9560—Ditto, Chloride of Calcium. Straight glass cylinder, closed by perforated corks, with connecting tubes, 200x19 mm.; each</b>					<b>30</b>
<b>*9565—Ditto, ditto, with one bulb.</b>					
Each.....	10	13	15	20	25 cm.
	\$0 10	12	14	18	20
<b>*9570—Ditto, ditto, with two bulbs.</b>					
Each.....	13	15	20	23	30 cm.
	\$0 15	17	22	25	31
<b>*9575—Ditto, ditto, with two bulbs, bent.</b>					
Each.....	13	15	20	23	30 cm.
	\$0 18	25	30	35	40
<b>*9580—Ditto, ditto, with two bulbs, with small inside tube, according to Prof. Mixer.</b>					
Each.....	15 cm.	20 cm.	25 cm.		
	\$0 25	31	37		

REMEMBER OUR DISCOUNT.



<b>*9585—Tubes, for Liebig's Condensers, of well annealed glass.</b>					
Each.....	60 cm.	90 cm.	120 cm.	150 cm. long.	
	\$0 42	65	1 00	1 25	
<b>*9590—Ditto, Drying, Liebig's; length of acid vessel 12 cm.</b>					<b>37</b>
<b>*9595—Ditto, ditto, Mitscherlich's; length of acid vessel 15 cm.</b>					<b>50</b>
<b>*9600—Ditto, ditto, Scheibler's</b>					<b>95</b>
<b>*9601—Ditto, ditto, ditto, with stop-cock</b>					<b>1 85</b>
<b>*9602—Ditto, ditto, Schroetter's</b>					<b>1 25</b>
<b>*9605—Ditto, ditto, Winkler's, with platinum wire; filled with beads</b>					<b>1 50</b>
<b>*9610—Ditto, Eggertz', for colorimetric determination of carbon in steel (also called carbon tubes or comparing tubes). (Illustr. p. 433.)</b>					
Graduated 25 cc. 30 cc. 50 cc. 100 cc.					
Without glass stopper	Per set of two	\$2 80	3 10	3 10	3 45
	Per set of four	5 60	5 60	6 20	6 90
With glass stopper.....	Per set of two	3 50	3 75	3 75	4 05
	Per set of four	7 00	7 00	7 50	8 10

- \*9611—**Tubes, Colorimetric. Apparatus according to M. Ukena for the colorimetric method.** As shown on the illustration it consists of ten glass-stoppered Eggertz' Tubes, which are absolutely uniform, divided 30 cc. in  $\frac{1}{2}$  cc. and numbered 1 to 10. A white milk-glass plate is provided for the back-ground, while the observations are made through two colored glass plates ..... \$ 37 50
- \*9615—**Tubes, Filtering,** for filtering with asbestos, glass powder, sand, etc., according to Fresenius, for Gooch's platinum crucibles. **Form A and B.** Inside diameter of wide tube. 19 mm. 25 mm. 28½ mm. 32 mm.  
Each..... \$0 19 25 30 35
- 9616—Ditto, ditto, made of **platinum; at lowest market price.**
- \*9617—Ditto, ditto, for filtering with asbestos, glass-wool, etc. .... 30
- \*9618—Ditto, ditto, larger, with bulb..... 62



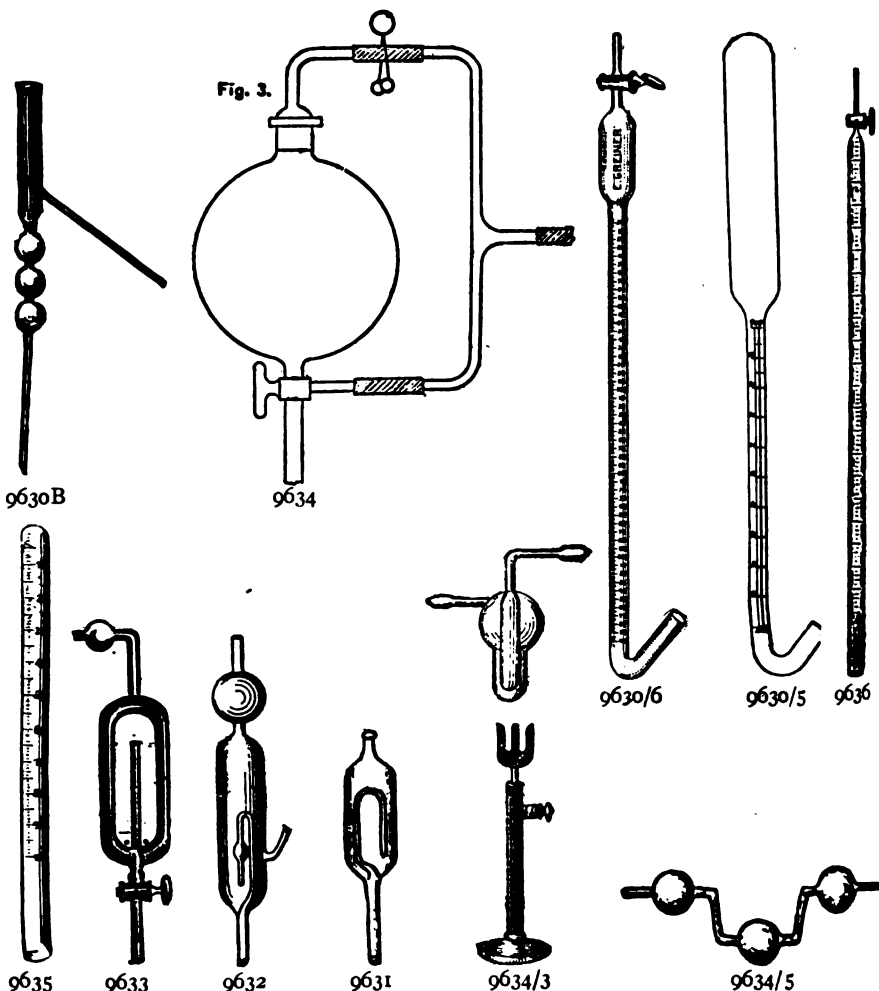
**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*9620—**Tubes, for fractional distillation, according to Le Bel Hen-**  
niger, with.....  
2 \$1 25 3 1 55 4 2 25 5 2 80 6 3 50
- \*9621—Ditto, ditto, according to Glinsky, provided with glass valves.  
Small. Medium. Large.  
\$2 00 2 30 2 50
- \*9625—Ditto, ditto, simple tube with smaller side tube. 15 cm. 20 cm.  
30 50 cts.
- \*9628—Ditto, ditto, with one bulb. 15 20 cm. long.  
Each..... \$0 30 44
- \*9629—Ditto, ditto, with two bulbs. 18 23 cm. long.  
Each..... \$0 44 55
- \*\*9630—Ditto, ditto, according to Wurtz, fig. 9630 A and 9630 B. (Illustr. 9630 B p. 434.)  
20 cm. 25 cm. 30 cm.  
With two bulbs (No. 9630A); each..... \$0 80 85 1 00  
25 cm. 30 cm. 40 cm.  
With three bulbs (No. 9630B); each..... 85 95 1 05

- \*9630/5—**Tubes, Gas**, Cooper's, modified by Chollar, for approximately determining constituents of illuminating gas. Made in 3 sizes, bulb part having 90%, 75% and 50% of total contents respectively..... \$ 4 50
- \*9630/6—Ditto, ditto, 50%, with stop-cock..... 6 00
- \*I 9631—**Tubes; Gas Washing Funnel**, Kemp's. Capacity 100 200 cc.  
\$0 85 1 25
- \*9632—Ditto, ditto, Kjeldahl's..... 1 85
- \*9633—Ditto, ditto, Muencke's. Capacity 100 250 500 cc.  
Without stop-cock..... \$1 25 1 85 2 50  
With stop-cock..... 2 50 3 10 3 75
- \*9634—Ditto, **Gas Washing**..... 4 50

REMEMBER OUR DISCOUNT.



\*9634/3—**Tubes, Gas Washing**, according to Habermann.  
Without and with support.  
\$0 94 1 85

\*9634/5—Ditto, ditto, Liebig's, with three bulbs..... 35

\*9635—Ditto, **Gasometer**, Bunsen's.

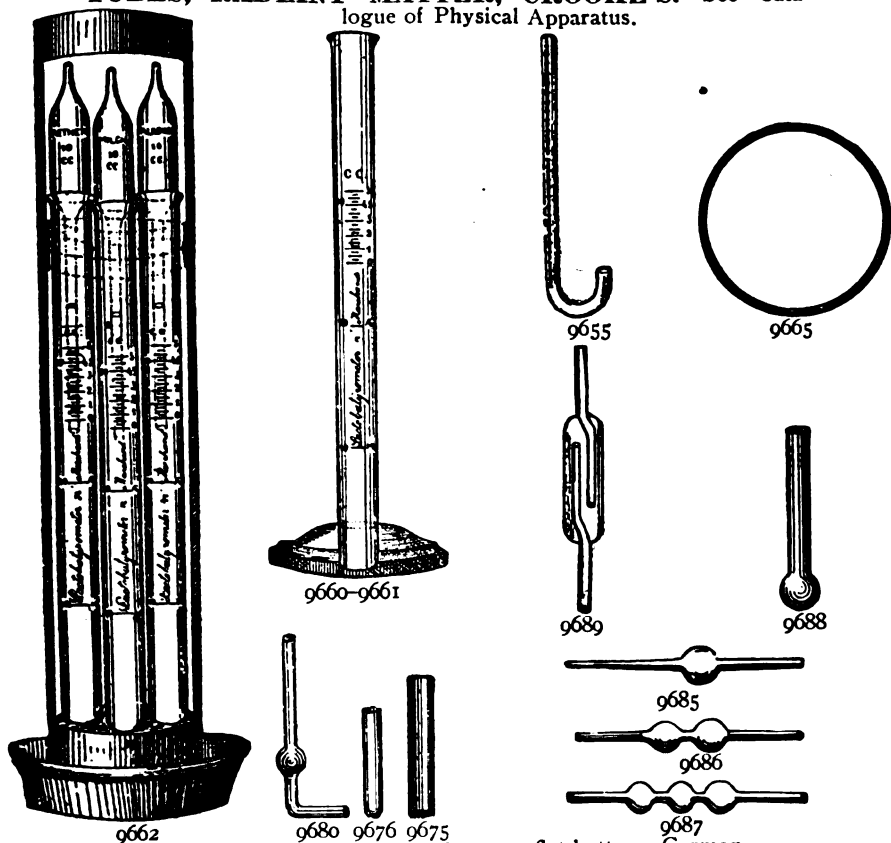
25 cc. in  $\frac{1}{8}$  25 cc. in  $\frac{1}{4}$  50 cc. in  $\frac{1}{2}$  100 cc. in  $\frac{1}{2}$  200 cc. in  $\frac{1}{2}$  300 cc. in  $\frac{1}{2}$   
\$1 25 95 1 25 1 75 2 15 2 10 3 10

\*9636—Ditto, ditto, ditto, with glass stop-cock on top. 50 cc. in  $\frac{1}{8}$  100 cc. in  $\frac{1}{2}$   
\$2 80 3 40

9640, etc.—**Tubes, Geissler's**. See Catalogue of Physical Apparatus.

- \*9655—**Tubes, graduated**, for quantitative determination of carbonic acid in illuminating gas. (See also No. 5066)..... \$ 2 00
- \*9660—**Tubes, graduated**, Marchand's, for determining the amount of fat in milk, as used by the Aylesford Dairy Company, London. These tubes are especially made for us and **graduated with the utmost accuracy. Without foot shown on illustration.** Each 80c; doz., 9 00
- \*9661—Ditto, ditto, on foot, each..... 1 25
- \*9662—Ditto, ditto, without foot; set of three with three 10 cc. pipettes, packed in brass cylinder, complete..... 12 50
- \*9665—Ditto, of thin Bohemian glass, 1 meter long.  
 About..... 13 19 25 mm. diameter.  
 Each..... \$0 45 60 75
- 9670—Ditto, **Julep**, of glass. 20 cm. 25 cm. 30 cm. long.  
 Per doz..... \$0 20 25 30

**TUBES, RADIANT MATTER, CROOKE'S.** See Catalogue of Physical Apparatus.



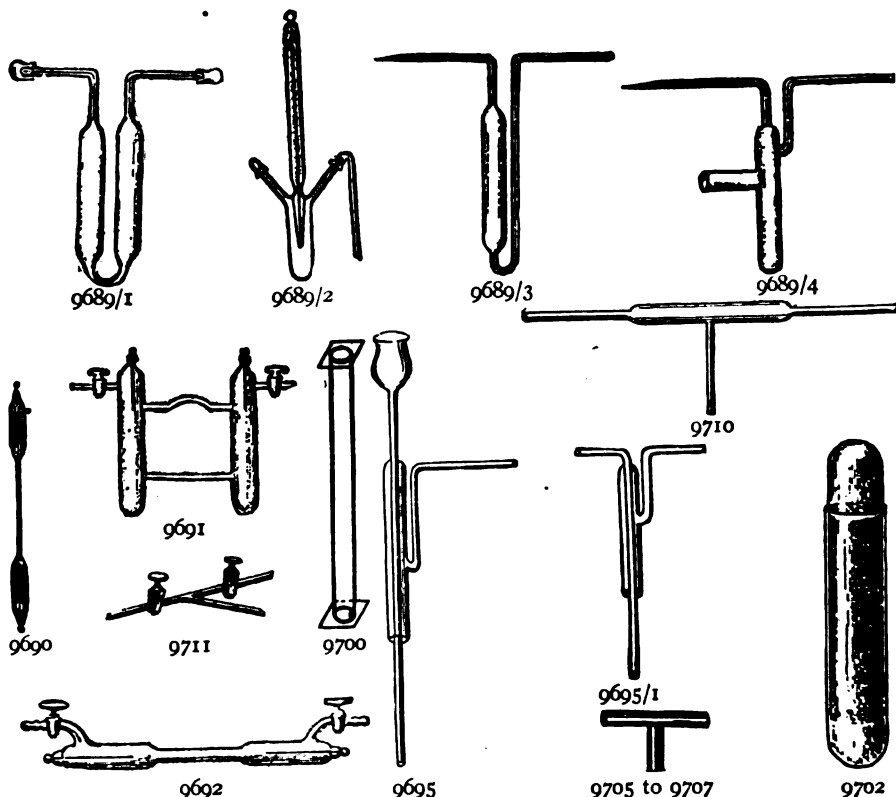
**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*9675—**Tubes, for samples and specimens, flat bottom, German.**  
 Length..... 100 140 150 mm.  
 Diameter..... 18 35 22 mm.  
 Each..... \$0 06 14 09  
 Doz..... 55 1 25 80
- \*9676—Ditto, ditto, of heavy German glass, round bottom.  
 50x7 50x18 80x12 80x18 100x13 120x15 150x20 180x18 200x25/26 mm.  
 Each \$0 03 4 4 5 5 6 7 8 10  
 Doz. 25 31 33 38 38 45 62 65 95
- \*9680—Ditto, **Reduction, of infusible Bohemian glass, bent end,** with one bulb..... 35
- \*9685—Ditto, ditto, ditto, straight end, with one bulb..... 25
- \*9686—Ditto, ditto, ditto, straight end, with two bulbs..... 44
- \*9687—Ditto, ditto, ditto, straight end, with three bulbs..... 60
- \*9688—Ditto, ditto, of hard glass, with bulb at end.  
 10 cm. 13 cm. 15 cm. 18 cm. 20 cm.  
 Each..... \$0 15 18 20 25 30  
 Per doz..... 1 50 1 75 2 00 2 50 3 00
- \*9689—Ditto, **Safety**, according to Babo..... 94

*9689/1—Tubes, for the determination of specific gravity, according to Sprengel .....	\$ 1 25	
*9689/2—Ditto, according to Sprengel, with thermometer melted in and cap and suction tube ground on .....	5 90	
*9689/3—Ditto, improved by Nicol, for fluids .....	65	
*9689/4—Ditto, improved by Nicol, for solids .....	75	
*I 9690—Ditto, <b>Spectrum</b> , containing the following substances:		
1. Alcohol.	10. Cyanogen.	19. Nitrous Oxide.
2. Ammonia.	11. Ether.	20. Nitric Acid.
3. Boron Fluoride.	12. Hydrochloric Acid.	21. Oxygen.
4. Bromine.	13. Hydrogen.	22. Phosphorus.
5. Carbonic Acid.	14. Hydrogen Cyanide.	23. Selenium.
6. Carbonic Oxide.	15. Iodine.	24. Silicon Fluoride.
7. Carburetted Hydrogen.	16. Mercury.	25. Sulphur.
8. Chloride of Tin.	17. Mercury Sulphuret.	26. Sulphuretted Hydrogen.
9. Chlorine.	18. Nitrogen.	27. Vapor of Water.
Each .....	2 65	

REMEMBER OUR DISCOUNT.



*9691—Tubes, <b>Spectral</b> , new construction, for longitudinal observations of the electric spark, with two stop-cocks .....	5 00
*9692—Ditto, ditto, with two stop-cocks .....	4 35
*9695—Tubes, <b>Vogel's</b> . Funnel and gas-conducting tube combined, a substitute for Wul's bottle. Fig. 9695 and 9695/1; per pair .....	1 00
*9700—Ditto, <b>for water analysis</b> , (2-foot tubes); each .....	3 10
*9702—Ditto, <b>Weighing</b> , in sets of two; per set .....	25
*9705—Ditto, T form. 3 6 9 12.5 19 mm. inside diameter.	
Each .....	\$0 15 19 25 31 50
*9706—Ditto, T form, <b>of heavy barometer tubing</b> .....	40
*9707—Ditto, T form, <b>of brass</b> .	
Each .....	\$0 45 55 65 80 1 00
*9710—Ditto, T form, <b>Liebig's</b> .....	60
*9711—Ditto, T form, with two stop-cocks .....	3 10

\*9715—Tubes, U form, plain.

8 cm.	10 cm.	13 cm.	15 cm.	18 cm.	20 cm.	25 cm.	30 cm.
\$0 15	17	20	25	31	37	50	62

\*9720—Ditto, U form, with side tubes.

10 cm.	15 cm.	20 cm.	25 cm.
\$0 20	31	44	65

\*9721—Ditto, U form, with side tubes, one of the tubes with bulb, according to Völlhard.

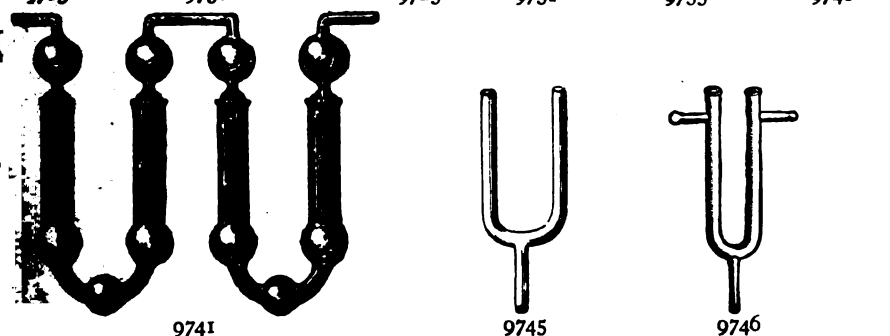
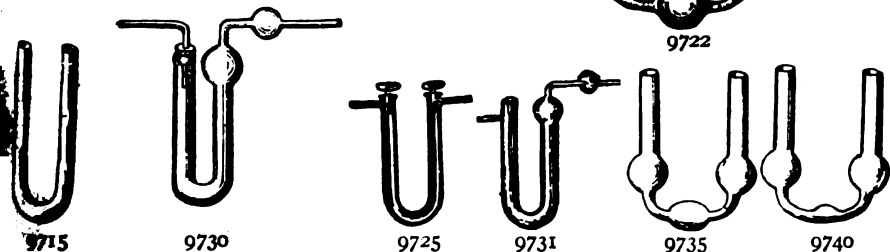
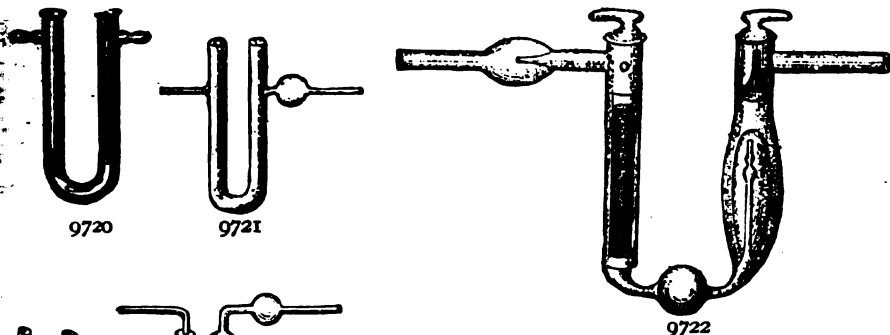
12 cm.	15 cm.	20 cm.
\$0 37	44	50

\*9722—Ditto, U form, according to Schmitz, for elementary organic analysis; about 20 cm. high

\$ 2 50

\*9725—Ditto, U form, with side tubes and perforated glass stoppers, the stoppers acting as stop-cocks.

12 cm.	15 cm.
\$1 50	1 75



APPROXIMATE EQUIVALENTS:

3 inch=75 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

\*9730—Tubes, U form, Marchand's, with two bulbs and connecting tube.

10 cm.	13 cm.	15 cm.
\$0 37	44	50

\*9731—Ditto, U form, with two bulbs and side tube.

10 cm.	15 cm.
\$0 37	50

\*9735—Ditto, U form, with three bulbs.

7 5 cm.	10 cm.	15 cm.	20 cm.
\$0 25	30	44	70

\*9740—Ditto, U form, with three round bulbs, the middle one being smaller than the side bulbs, 20 cm.

70

\*9741—Ditto, U form, with three bulbs. Set of two with hollow glass stoppers ground in; used in the analysis of ores, according to Woehler; per pair

4 00

\*9745—Ditto, U form, with outlet at bend.

13	15	20 cm.
\$0 31	37	50

\*9746—Ditto, U form, with outlet at bend and side tubes at upper limbs.

13	15	20 cm.
\$0 50	62	75

\*9750—Tubes, U form, with outlet at bend, provided with a Geissler's stop-cock.

13	15	20 cm.
\$1 50	1 55	1 75

\*9755—Ditto, U form, with one limb drawn out.

15	20	25	30 cm.
\$0 37	50	62	75

\*9756—Ditto, U shaped Bulb, according to Todd.

\$ 0 75

\*9760—Ditto, W form.

16	20	25	30 cm.
\$ 50	75	1 00	1 25

\*9765—Ditto, Y form.

3	6	9	12.5	19 mm. inside diameter.
\$0 15	19	25	31	50

\*9766—Ditto, Y form, of heavy barometer tubing

40

\*9770—Ditto, Y form, of glass, to connect one large pipe with two small ones.

Approx. diameter of large end 7.5 to 9 8 to 12.5 10 to 19 25 mm.

Approx. length..... 13 16 21 21 cm.

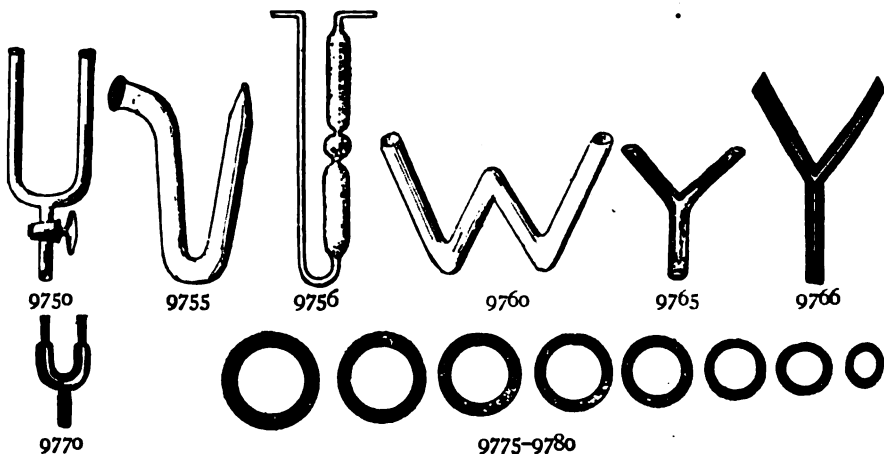
\$0 30	35	55	70
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\*9775—Tubing, of American Glass;

15 to 25 mm. outside diameter. 26 to 45 mm. outside diameter.

Per kilo \$1 35 1 60

REMEMBER OUR DISCOUNT.



\*9780—Tubing, of best German glass, soft, free from lead; the best tubing made.

Outside diam.	1.5 to 25 mm.	Larger than 25 mm.	Larger than 50 mm.	Larger than 62 mm.
Per kilo.	\$1 37	1 65	1 95	2 35
In quantities of 25 kilos or more }	1 21	1 55	1 85	2 20

When ordering, state outside diameter.

I 9781—Ditto, of best German glass, with blue line on white back.

Per kilo.

2 75

9785—Ditto, of infusible Bohemian glass, for combustions.

Up to 9 mm. inside diameter, larger than 9 mm. inside diameter.

Per kilo. \$2 75 2 20

When ordering, give inside diameter.

9786—TUBING, OF HENRY HEIL CHEMICAL CO.'S BOHEMIAN NORMAL GLASS, INFUSIBLE, FOR COMBUSTIONS.

Superior to any other Combustion Tubing.

(For note on H. H. C. Co.'s Bohemian Normal Glass see Preface.)

When ordering give inside diameter.

Up to 9 mm. inside diameter, larger than 9 mm. inside diameter.

Per kilo \$2 75 2 20

I 9787—Tubing, of Jena Normal Glass (Einschmelzroehren); per kilo

2 20

I 9787/1—Ditto, ditto, for combustions; per kilo

2 20

I 9787/2—Ditto, ditto. (Verbundglasroehren); per kilo

2 40



\*9795—**Tubes, of infusible Bohemian Glass, for combustions, with point drawn out and bent.** (Illustr. p. 440.)

Length,	35	41	51	56	61	77 cm.
Inside diameter,	13	13	13	13	14	15 mm.
	\$o 32	38	45	55	60	65

\*9800—**Tubing, of best Bohemian glass, for steam boilers, etc. (gauge tubing), well annealed;** (Illustr. p. 440); per kilo ..... \$ 2 00  
When ordering, state outside diameter.

9801—Ditto, ditto, ditto, **any length cut to order at lowest prices.**

\*9805—Ditto, **of glass, flat;** (Illustr. p. 440); per kilo, \$1 75; per hecto..... 20

\*9810—Ditto, **of best German glass, for thermometers, with milk-glass back, in length of 91 cm., closed at both ends;** (Illustr. p. 440.) each.. 25

9811—Ditto, ditto, ditto, not closed, per kilo..... 3 30

9813—**Tubing, Parchment Paper, for dialytic experiments, 5 cm. diameter. In bundles of 3 3/4 meters. Per bundle** ..... 5 00

9814—**Tubing, Mohair, with patent rubber ends and nickel-plated ferrules. An excellent gas tubing, which does not kink nor smell; inside diameter 9 1/2 mm. (3/8 in.). Can be had in any length from 4 feet to 15 feet (122 cm. to 457 cm.)**  
Per foot 17 cts.; per meter..... 56

9815—**Tubing, of India Rubber, white, vulcanized, first quality, ordinary thickness.**

Inside diameter	4.7	6	8	9.5	13	19	25 mm.
	= 3/16 in.	1/4 in.	5/16 in.	3/8 in.	1/2 in.	3/4 in.	1 in.
Per foot.....	\$o 08	11	14	16	19	30	45
By roll of 12 feet;							
per foot .....	07	10	12	14	17	27	40
Per meter .....	26	36	46	53	62	98	1 48
By roll of 365 cm.;							
per meter.....	23	33	39	46	56	88	1 31

If desired we shall also bill it by weight, if large quantities are bought, at \$2.85 per kilo, or \$1.29 per lb.

9825—Ditto, ditto, **extra heavy, for Bunsen's filter-pump, etc.** It will not collapse under a perfect vacuum. The two small sizes are also well adapted for Bunsen Burners.

Inside diameter.....	4.7	6	13 mm.
	= 3/16 in.	1/4 in.	1/2 in.
Per foot .....	\$o 17	20	60
By roll of 12 feet; per foot.....	15	18	55
Per meter .....	56	66	1 97
By roll of 365 cm.; per meter..	49	59	1 80

9826—**Tubing, of India Rubber, white, first quality, hand-made, cloth wrapped. Specially made for us. Ordinary thickness.** The best white rubber tubing made.

Inside diameter	3	4.7	6	8	9.5	13	16	19	25 mm.
	= 1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1 in.
Per foot.....	\$o 07	10	15	17	20	28	40	50	70
By roll of 12 ft.; per ft.	06 3/4	09	13	15	18	25	35	45	65
Per meter .....	23	33	48	56	66	89	1 30	1 65	2 30
By roll of 365 cm.;									
per meter.....	21	29	42	49	59	82	1 12	1 48	2 13

9827—Ditto, ditto, same quality as No. 9826, **but extra heavy.**

Inside diameter	3	4.7	6	8	9.5	13	16	19	25 mm.
	= 1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1 in.
Per foot.....	\$o 10	13	18	24	28	35	50	58	90
By roll of 12 ft.; per ft.	09	12	17	22	25	31	45	53	83
Per meter .....	33	43	59	79	92	1 15	1 64	1 90	2 95
By roll of 365 cm.;									
per meter.....	29	37	54	72	82	1 02	1 48	1 74	2 70

9830—Ditto, ditto, **black, of pure gum, excellent in every respect.**

Inside diameter	3	4.7	6	8	9.5	13	19	25 mm.
	= 1/8	3/16	1/4	5/16	3/8	1/2	3/4	1 in.
Per foot.....	\$o 08	16	21	30	40	46	86	1 54
By roll of 12 ft.; per ft.	07	15	19	28	36	43	83	1 48
Per meter.....	25	53	69	99	1 30	1 50	2 82	5 05
By roll of 365 cm.;								
per meter.....	23	49	61	91	1 17	1 40	2 72	4 85

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**9831—Tubing, of India Rubber, black, of pure gum, thin walls, for use with Gooch Crucibles.**

Diameter when folded.....	25 mm.	31 mm.	38 mm.
Per foot.....	\$0 20	25	30
Per meter.....	65	82	1 00

**9832—Tubing, of India Rubber, red or Antimony Tubing, hand-made, an excellent rubber tubing for laboratory work.**

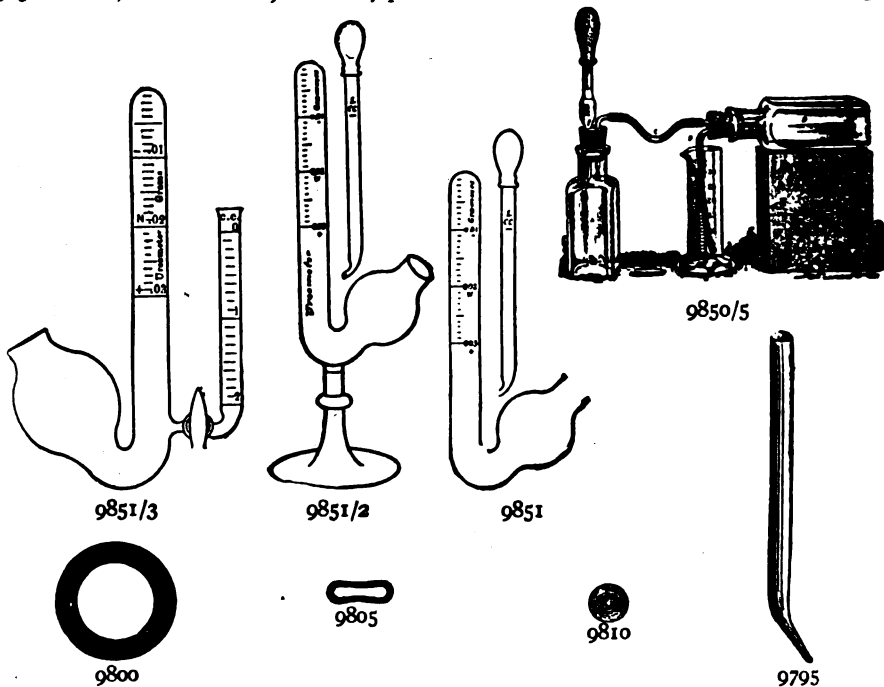
<b>Inside diameter..</b>	3	4.7	6	8	9.5	13	16	19	25 mm.
	= 1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1 in.
Per foot.....	\$0 11	16	19	22	28	38	50	55	85
By roll of 12 ft.; per ft.	10	15	17	20	25	35	45	50	80
Per meter.....	36	53	62	72	90	1 25	1 60	1 80	2 79
By roll of 365 cm.; per meter.....	33	48	56	66	82	1 15	1 48	1 65	2 60

**9833, etc.—Tuning Forks. See Catalogue of Physical Apparatus.****9840—Twine, Flax, strong.**

Per kilo.....	medium.	light.
	\$1 10	1 32

**9845—Ditto, ditto, variegated, thin; per kilo..... \$ 1 43****9850—Ditto, Sea Island, assorted; per kilo..... 1 50**

REMEMBER OUR DISCOUNT.



**\*9850/5—Urea Apparatus, Squibb's, for the estimation of urea in urine by displacement, with vials, graduated pipette, graduated cylinder 50 cc. and bottle of chlorinated lime.....**

3 10

**\*9851—Ureometer, according to Doremus, graduated in grammes or grains, with pipette, for the rapid estimation of Urea.....**

1 10

Support No. 8760 with clamp.....

1 35

**\*9851/2—Ditto, ditto, on glass foot.....**

1 35

**\*9851/3—Ureometer, according to Doremus, improved by Hinds, with stop-cock. Urine required for test is delivered with greatest accuracy and no gas escapes from the bulb.....**

5 00

**9851/4—Ditto, ditto, same as No. 9851/3, but on glass foot.....**

5 35

**Reagents Needed:**

The Sodium Hydrate solution (100 grammes to 250 cc. of water, or 6 ounces to 1 pint of water) will keep indefinitely when tightly stoppered.

The Bromine may be removed from the bottle in which it is kept by means of the nipple pipette.

One cc. suffices for a test. More can be removed if a quantity of hydrobromide is to be made up. Some care should be exercised in handling the Bromine, as it gives off irritating fumes, but by the above method of procedure no inconvenience ought to be experienced.

**9851/4—Ureometer, Reagents needed for. (Continued):**

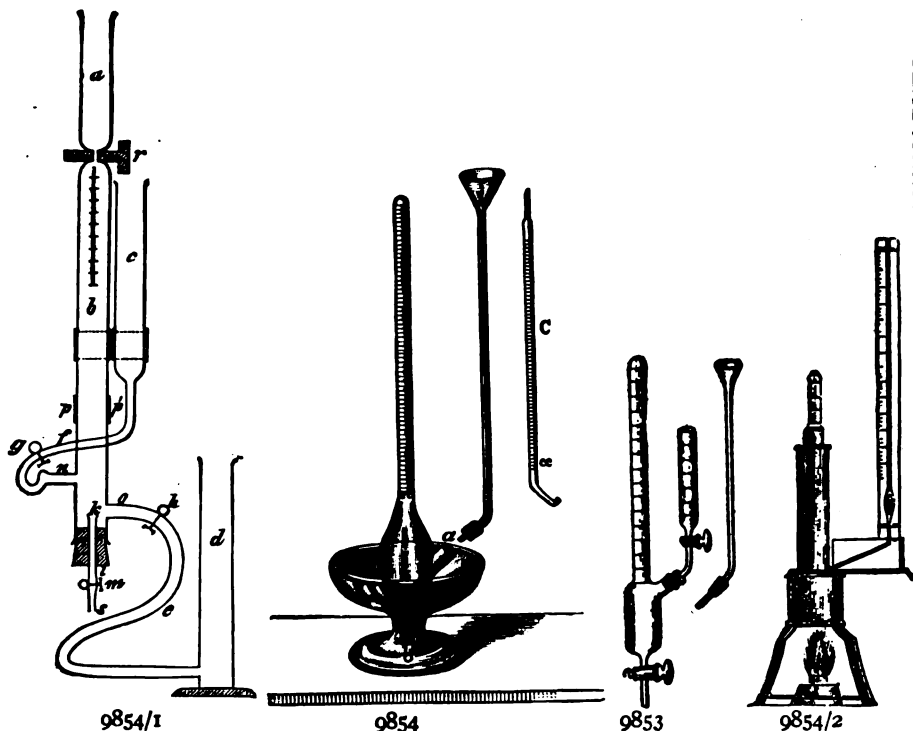
The concentrated hydrobromide must be diluted with its own volume of water. This can be done approximately. The long arm and the bend of the ureometer must be filled with the hydrobromide.

Having washed the pipette, draw up exactly 1 cc. of urine, pass the pipette through the bulb of the ureometer as far as it will go in the bend. Compress the nipple gently and steadily. The urine will rise through the hydrobromide and the urea instantly decompose, giving off nitrogen gas.

Withdraw the pipette after the urine has been expelled (taking care not to press the nipple so hard as to drive the air out after the urine) and read the volume of gas after allowing the froth to subside. **The ureometer indicates according to its graduation either in milligrammes of urea in 1 cc. of urine or grains per fluid ounce of urine.**

In the office of the consulting physician or in hospitals, where a quantity of hydrobromide can be made up every day or so, this apparatus supplies a long felt want. After using, simple washing will leave it ready for subsequent tests.

Solution of Sodium Hydrate for above, \$1.65 per kilo., including bottle; Bromine 33 cts. per 30 grms., including bottle.

**9852—Ureometer, (Hydrobromide Apparatus, Huefner's). See No. 2120.**

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

*9853—Ureometer, according to Anderlini, for the estimation of urea.....	\$ 6 50
*9854—Ditto, according to Marshal.....	3 75
*9854/1—Ditto, according to Frutiger, for determining urea (see Fresen. Zeitschrift fuer Analyt. Chemie, vol. 26., p. 401).....	10 00
*9854/2—Vaporimeter, according to Geissler, for determining in a few minutes with a small quantity of liquid the percentage of alcohol in liquids containing very small quantities of alcohol. Complete.....	25 00
*I 9854/20—Viscosimeter, Engler's, gold-plated inside, with thermometer and ring burner, on tripod; complete with certificate of accuracy and directions. (Illustr. p. 442.).....	45 00
Extra Thermometer.....	\$2 00
Extra graduated Flask.....	1 50
Ditto, tested by the German government.....	2 50

\*I 9854/21—**Viscosimeter**, according to Reischauer, modified by Edmund Schmidt.....

\$ 1 55

\*I 9854/22—Ditto, according to W. Thoerner.....

4 15

\*I 9854/23—Ditto, according to Neumann Wender.....

8 30

\*9855—**Vises, Hand, best steel.**

9 cm.

10 cm.

\$0 70

80

\*9860—Ditto, to screw on table.

38

900

\$1 00

50

1350  
1 35

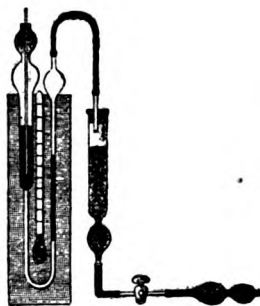
70 mm. jaws.

2250 grammes.  
2 50

REMEMBER OUR DISCOUNT.



9854/20



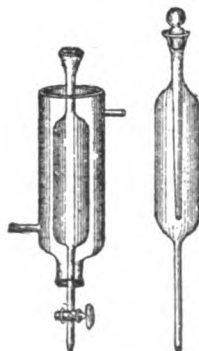
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9865



9870



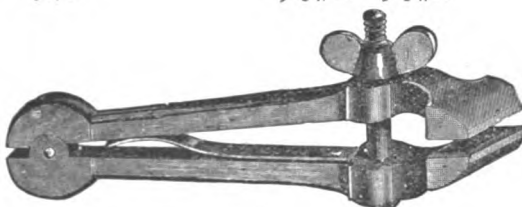
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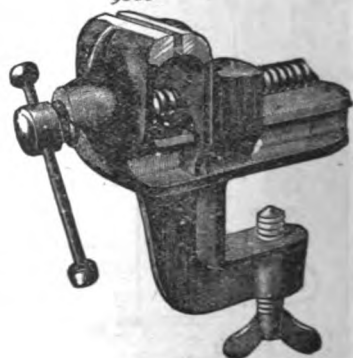
9854/21



9866



9855



9860

\*9865—**Vises, Hand, Stephens', of steel, with lever.**

Width of jaws.....	50	70	90	115 mm.
Opens .....	57	76	127	165 mm.
Weight .....	900 grms.	6 kilos.	19 kilos.	30 kilos.
Each .....	\$6 25	10 85	17 50	24 15

\*9866—**Vise and Anvil Combined**, with hardened face and 7.5 cm. adjustable jaw. Opens 11 cm.; weight 14 kilos.

10 00

\*9870—**Voltameter**, according to Dr. W. G. Levison, for measuring the strength of electric currents. Platinum plates can be taken out. For description see Greer's Dictionary of Electricity, N. Y., 1882.

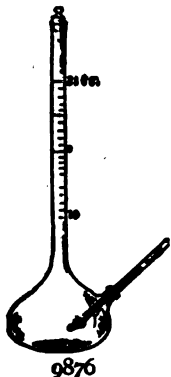
Without support .....

12 50

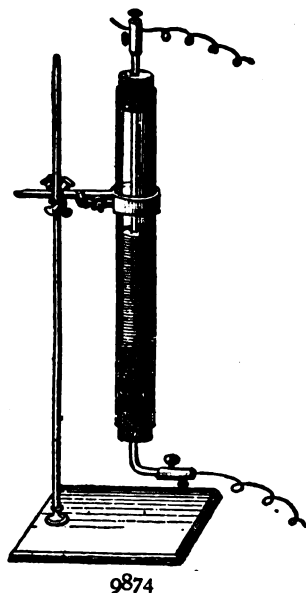
With support.....

16 00

- \*9871—**Voltmeter**, according to Dr. W. G. Levison, for measuring the strength of electric currents. Same as No. 9870, but with enlarged tube and larger platinum plate.
- |                      |          |
|----------------------|----------|
| Without support..... | \$ 12 50 |
| With support.....    | 16 00    |
- \*9872—**Ditto**, according to Wolff, for measuring electric currents (*Zeitschrift fuer angewandte Chemie*, 1888, p. 296). With support.....
- |                      |       |
|----------------------|-------|
| Without support..... | 20 00 |
| With support.....    | 13 35 |
- \*9873—**Ditto**, according to Classen, for measuring electric currents.
- |                      |       |
|----------------------|-------|
| Without support..... | 20 00 |
| With support.....    | 13 35 |
- \*9874—**Ditto**. Also used for preparing Ammonium Amalgam by electrolysis.
- |                      |       |
|----------------------|-------|
| Without support..... | 10 00 |
|----------------------|-------|



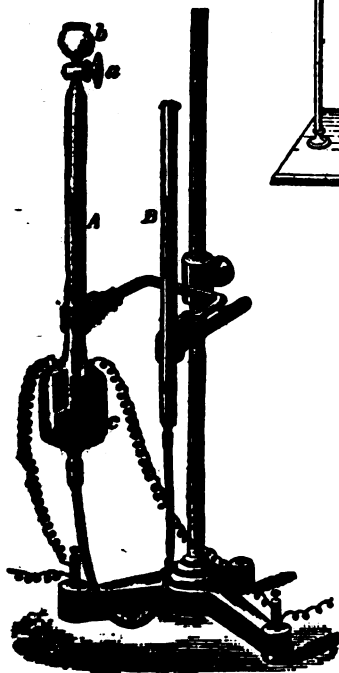
9876



9874



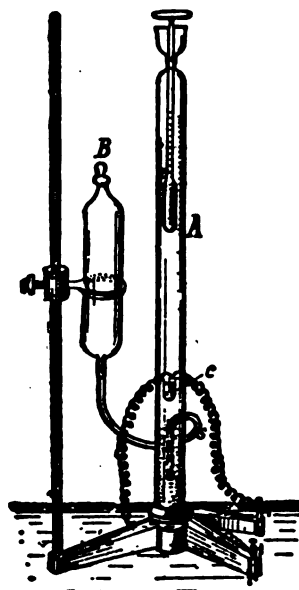
9871



9873



9875



9872

## APPROXIMATE EQUIVALENTS:

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=490 grm.

- \*9875—**Volumenometer**, according to **Thoerner**, for taking the specific gravity of solids, especially coke, charcoal, etc., determining at the same time the porosity of the substances, 100 cc. in  $\frac{1}{4}$ .....
- |  |      |
|--|------|
|  | 5 25 |
|--|------|
- \*9876—**Ditto**, with measuring tube and thermometer, for taking specific gravity of liquids.....
- |  |      |
|--|------|
|  | 6 25 |
|--|------|
- 9877—**Ditto**, according to **Gay Lussac**, for light liquids; each.....
- |  |    |
|--|----|
|  | 70 |
|--|----|
- 9877/1—**Ditto**, ditto, for heavy liquids; each.....
- |  |    |
|--|----|
|  | 80 |
|--|----|

\*9880—**Watch-Glasses**, convex, well annealed, with ground edges, best make.

(For larger Watch-Glasses, see No. 4460.)

	25	38	44	50 mm. diameter.
Each.....	\$0 03	03	03	03
Doz.....	25	30	30	30

\*9885—Ditto, 1 pair of 50 mm., accurately ground, held together by brass clamp \$ 0 35

\*9890—Ditto, counterpoised (Scale Pans).

	50 mm.	63 mm.	76 mm. diameter.
Per pair.....	\$1 00	1 10	1 20

9900—**Watch-Springs**, for burning in oxygen; each, 5 cts.; by doz..... 30

\*9903—**Water Bath**, for test-tubes, copper, 15x15 cm., with openings for nine test-tubes and thermometer..... 4 00

\*9909—**Water Baths**, of cast-iron, nickel-plated, with concentric rings, 15 cm. diameter..... 1 65

\*9910—**Water Baths**, of heavy copper, with handles and small cover to keep them closed when not in use; **most improved make**.

Diameter.....	10 cm.	12.7 cm.	14 cm.	15 cm.	20 cm.	25.4 cm.
	\$1 00	1 25	1 55	1 75	2 85	5 75

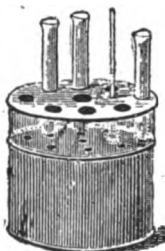
REMEMBER OUR DISCOUNT.



9885



9880



9903



9915



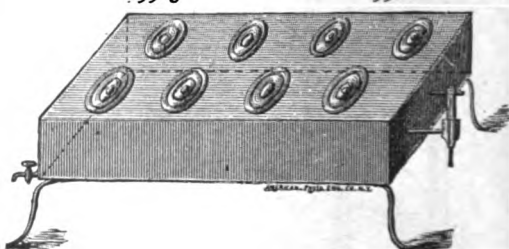
9916



9909, 9910 and 9911



9917



9920

\*I 9911—**Water Baths**, of heavy Aluminium, with concentric rings and handles of Aluminium.

Diameter.....	12 cm.	14 cm.	16 cm.	18 cm.	20 cm.	25 cm.
Each.....	\$3 10	3 90	4 80	6 20	8 30	10 00

\*9915—Ditto, of heavy copper, with handles and small cover to keep them closed when not in use, with Prof. Kekule's constant level.

	12.7 cm.	14 cm.	15 cm.	20 cm.	25.4 cm.
	\$2 20	2 50	2 70	3 80	7 00

\*9916—Ditto, ditto, ditto, on tripod, with Prof. Kekule's constant level, and with concentric rings not shown on illustration.

	12.7 cm.	14 cm.	15 cm.	20 cm.	25.4 cm.
	\$2 70	3 10	3 40	4 60	8 00

\*9917—Ditto, of iron, **white enameled inside**, with tin-lined copper rings.

Diameter.....	14 cm.	18 cm.	19.5 cm.	23.5 cm.	25 cm.	30 cm.
	\$2 15	3 35	4 00	4 90	7 50	10 25

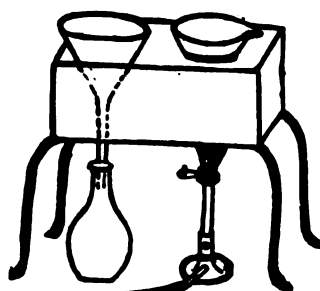
\*9920—Ditto, of heavy copper, 63x34x15.5 cm., to be heated by Bunsen Burner or steam, with eight openings of two sizes, provided with rings and covers, steam pipe and brass stop-cock to draw off the water. With Prof. Kekule's constant level; on four movable legs, complete.....

9921—Ditto, ditto, ditto, with two openings, one of 17.8 cm. diameter with 6 rings, the other of 30 cm. diameter, with 10 rings.....

27 50

27 50

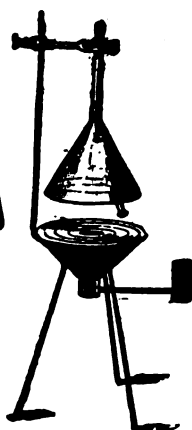
- \*9922—Water Baths, same as the preceding, measuring 34x37 cm., with four or eight openings, with rings..... \$ 18 75
- \*9923—Ditto, ditto, according to Kekule, with tripod, water level and holder for Meyer's vapor funnel, and concentric rings. Diameter 15.5 20 cm.  
\$7 50 10 00



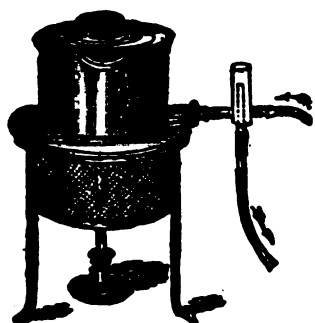
9925



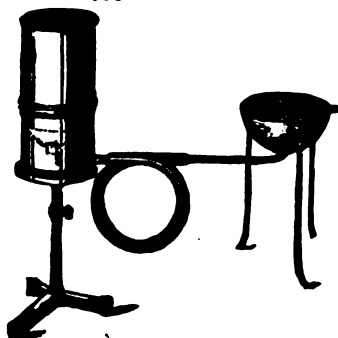
9922



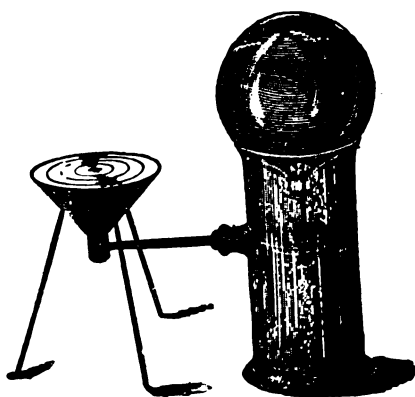
9923



9932



9930



9931

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

- \*9925—Water Bath, a square box of heavy copper, with one opening, provided with concentric rings, one opening for heating a funnel, and Prof. Kekule's constant level; size 33x18x12 cm. On four movable legs.....

18 75

- \*9930—Ditto, Fresenius', bath tripod with regulator on support table.

	12.5	15	20 cm.
Without support table.....	\$7 05	8 75	12 00
With support table.....	8 30	10 00	13 30

- \*I 9931—Ditto, Fresenius', with level and tripod.

	13	15	20 cm.
	\$9 50	11 00	12 50

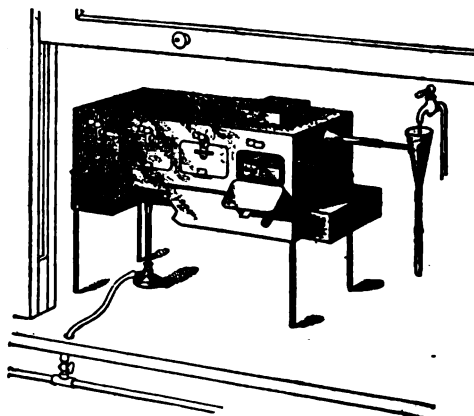
- \*9932—Ditto, with gauze protection for heating inflammable liquids; with Kekule's level. Diameter.....

	12	16	18	21	23.5 cm.
Each .....	\$8 65	10 00	11 00	13 25	16 50

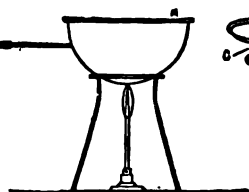
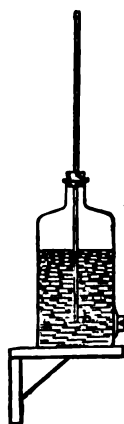
- \*9933—**Water Bath**, with constant level arrangement, and test-tube rack, as used by Dr. Blair in iron analysis, **complete with burner**..... \$ 7 50
- \*9934—Ditto, with four openings, each 15 cm. deep, 12.5 cm. wide, 6.3 cm. high, as used by Dr. Blair in analysis of iron ore; provided with water regulator ..... 37 50  
Single copper boxes, as used in connection with this bath, 114x95x38 mm. Each ..... 2 25
- \*9935—**Water Baths**, of Berlin porcelain; two dishes, one fitting into the other. No. .... 1 ..... 2 ..... 3  
Diameter ..... 10 ..... 13 ..... 15.5 cm.  
\$1 35 ..... 1 75 ..... 2 15
- Water Bath (Filter Dryer).** See No. 5130.



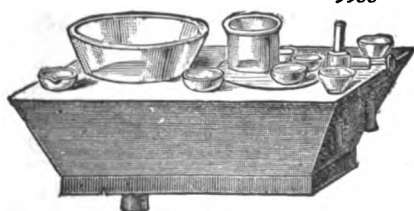
9935



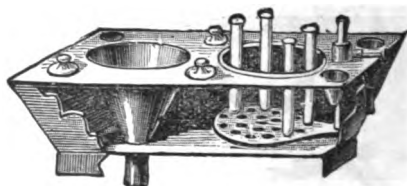
9934



9933



9936, fig. 2



9936, fig. 3

- \*.\*I 9936—**Water Bath; Combination Water Bath according to Griffin, modified by Dr. E. Herter, for hot filtration and evaporation.** Apparatus of copper in conical form with straight overhanging bottom for concentrating the heat. Interior length 39 cm., width 18 cm., depth 10 cm., with one opening for receiving a glass funnel 15.5 cm. and 2 smaller ones of 6 cm. diameter, one opening of 15 cm. with concentric rings and four small openings of different diameter with covers for dishes and crucibles (fig. 1). Covering plate with four openings of various sizes with covers, the largest opening having very narrow concentric rings for the reception of beakers of every size (fig. 2). Perforated adjustable suspension plate for beakers and test-tubes (fig. 3). On detachable iron support, **without gas burner.** (Illustr. No. 9936, fig. 1 on page 447).

**Without and with constant level.**

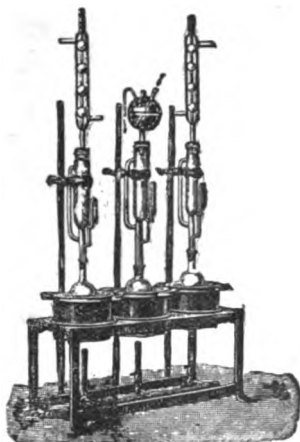
Each..... \$30 50

33 00

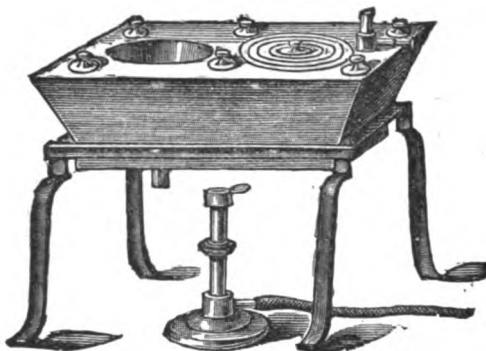
REMEMBER OUR DISCOUNT.



- \*I 9937—**Water Bath**, of heavy copper, for 6 Soxhlet's extraction apparatus with 6 sets of concentric rings and constant level, with adjustable ring burner, support and six-arm holder..... \$ 40 00
- I 9937/1—Ditto, ditto, without support and without six-arm holder..... 26 00
- I 9937/2—Ditto, ditto, the water bath alone, **without** support, six-arm holder and burner..... 18 00
- \*I 9938—**Water Baths**, set of three, of enameled iron with copper concentric rings, 16 cm. diameter; on wrought-iron support, with three burners and three clamps, but without the extraction apparatus..... 46 80



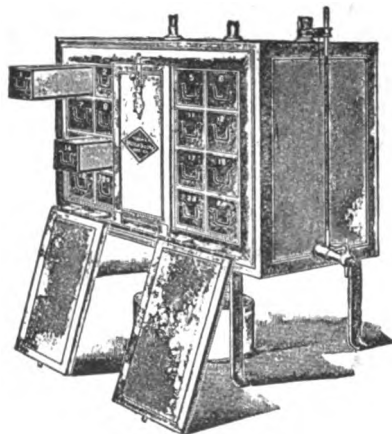
9938



9936, fig. 1.



9937



9939 No. 3

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 gm.; 1 pound = 450 grm.

- \*9939—**Water Baths, Lillie's.** This bath is constructed after specifications of Dr. F. R. Lillie of the University of Michigan, and is the most complete water-bath for general laboratory work offered. A greater variety and a larger amount of imbedding and allied processes, can be carried on in it at the same time than in any other. It consists of a large chamber in which a number of rectangular drawers are arranged in series. Individuals may work independently by using one or more drawers, and prepare imbedding material, carry on infiltration, or do imbedding in a single drawer if desired.

Copper is used for the front and bottom of the drawers as well as the bath proper. The sides of the drawers are made of zinc and perforated. The drawers have cross partitions, and are free from lateral support, which allows a circulation of heat through their perforated sides and from top to bottom of the chamber. Each drawer is numbered and provided with a wire drop handle; they are 25 cm. long, 10 cm. wide, and 8 cm. deep. Various dishes may be used in them; Prof. S. H. Gage recommends for infiltrating tissues in paraffine a basket made of tin and burnished copper with a strip of copper for a handle. Eight of these, of a proper size, may be used in a drawer.

**\*9939—Water Baths, Lillie's. (Continued):**

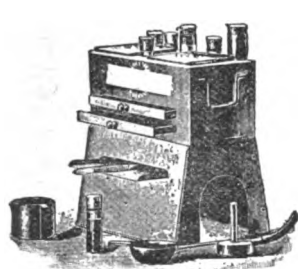
The exterior of the bath is covered with a non-conducting and waterproof material, which requires no enameling. The bath is supported on a heavy wrought-iron base enclosed with sheet-iron (not shown in cut) and has an intervening false bottom of sheet-iron. One door exposes two tiers of drawers. An open-end water gauge with stop-cock, tubulations for thermometer and thermo-regulator, and emptying stop-cock are provided.

The three sizes contain respectively 16,000, 32,000 and 48,000 cubic centimeters space in the drawers, and are furnished complete with thermometer, thermo-regulator, and gas burner.

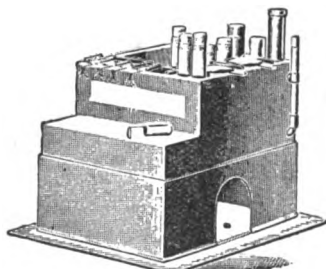
	No. 1	2	3
Number of tiers,.....	2	4	6
Number of trays,.....	8	16	24
Width (inside) cm.,.....	23	46	67
Height (inside) cm.,.....	36	36	36
Depth (inside) cm.,.....	27	27	27
Each, .....	\$86 65	109 30	133 00

**Oil Heater for Lillie's Water Bath.** Sufficient oil to last several days is held by the reservoir of this heater, which has a large burner with metal chimney and a perforated false top, forming a safety air chamber above the reservoir and preventing it overheating. The reservoir is made of heavy copper. This heater will maintain a uniform temperature and is suitable for use when the most delicate imbedding is to be done. Each .....

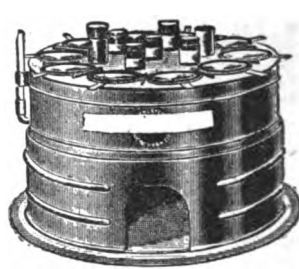
\$ 10 00



9939/1



9939/2



9939/3

**\*9939/1—Water Bath, Miller's.** This bath is a most desirable one for individual use, especially in histology, as it is arranged for a variety of work.

It was designed by Dr. W. S. Miller of the University of Wisconsin for such use in the histological laboratory, and has two imbedding cups, five infiltration vials, two drawers each capable of holding six slides protected from dust and for watch-glass imbedding, and a shelf for warming instruments. One of the cups is watch-glass shaped and is very useful for imbedding embryological material.

The bath is made of copper with a false bottom of sheet-iron and an enclosed base of the same material. Size of cups: 45 mm. deep by 55 mm. diameter, and 18 mm. deep by 65 mm. diameter. Water chamber: 20 cm. long, 10 cm. wide, and 10 cm. deep. Base: 11.5 cm. high. Complete, with thermometer, thermo-regulator, burner and asbestos mat .....

20 00

**\*9939/2—Water Bath, Naples.** This is a complete apparatus for individual and small class use. The most delicate work in paraffine imbedding and digestion experiments may be carried on in it, as well as the preparation of mounting media. It is the largest of the water baths designed for individual use and is in every way the best. The imbedding cups are semi-circular in shape, which enables them to be easily emptied, and have supports on the handles to prevent overturning when placed on a plane surface; there are five of these with glass covers, and six infiltration vials of two sizes.

Special features of this bath are an imbedding chamber, a drying chamber and a warming table. The imbedding chamber is on the top of the bath, covered by a glass plate, and has a tubulation for thermometer at the side. This chamber is 14 cm. long, 10 cm. wide, and 7.5 cm. deep, and is found useful for a variety of purposes, such as imbedding in special dishes, etc. The drying chamber is underneath the

**\*9939/2—Water Bath, Naples. (Continued).**

imbedding chamber and opens at the side of the bath. The warming table (shown in the illustration) is generally used for drying mounts, fixing objects on slides, and warming dishes, boxes, etc. Heavy copper is used throughout in the construction, except the base, which is sheet-iron. A false bottom of sheet-iron is provided. Water chamber: 23 cm. long, 29 cm. wide, and 13 cm. deep. Warming table: 70 cm. wide. Base: 20 cm. high.

Complete, with thermometer, thermo-regulator, burner and asbestos mat .....

\$ 33 25

**\*9939/3—Water Bath, Laboratory.** For general use in the laboratory. It is arranged so that a number of students may individually carry on their own work simultaneously and obtain the necessary imbedding material from a common stock receptacle. There are ten large-sized cups, of which seven are deep and three shallow, and five large-sized glass vials for infiltration work. An alcohol lamp will furnish sufficient heat when gas is not available.

It is constructed entirely of copper, and has a false sheet-iron bottom, a closed base, open-end water gauge, and tubulations for thermometer and thermo-regulator. Size of water chamber: 31.5 cm. diameter, 9 cm. deep. The base is 20 cm. high. Complete with thermometer, thermo-regulator, gas burner and asbestos mat. (Illustr. p. 448.) .....

26 65

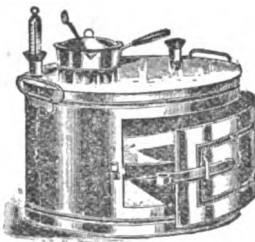
**\*9939/4—Water Bath, Copper.** This is a small bath that can be started and used very quickly. It has concentric rings of copper, a cover, steam escape, and an extra plate perforated to receive test tubes.

No. ....	1	2	3
Diameter .....	125	150	200 mm.
Number of rings .....	4	5	6
Each .....	\$1 67	2 33	3 33
Constant water level fitted to size, Nos. 1, 2 or 3; extra .....			

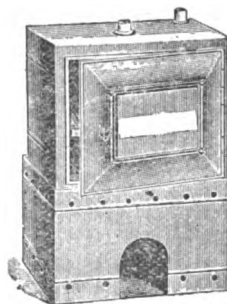
I 33



9939/4



9939/5



9939/6

**\*9939/5—Water Bath and Oven, Reeves'.** This combination apparatus has a 500 cc. stock paraffine cup, which is deep and conical in shape and provided with a handle, cover and stirrer. The large drying chamber is entirely surrounded by the water space. It has a removable shelf, is closed by a door hung on heavy hinges and fastened by a strong latch. Tubulations for thermometer and thermo-regulator.

Made of heavy copper throughout and furnished with a closed base of sheet-iron (not shown in illustration). Outside dimensions: 26.5 cm. in diameter, 22 cm. high (without base); chamber: 17 cm. wide, 13 cm. high and 15 cm. deep. Complete, with thermometer, thermo-regulator, burner and asbestos mat .....

20 00

**\*9939/6—Water Bath Drying Oven.** A very uniform temperature may be obtained in this oven. It has a large chamber and a wire-center shelf. The door is hung on heavy hinges and is fastened with a substantial catch. The oven is made of heavy copper and has a false bottom of sheet-iron. The enclosing base is also of sheet-iron. Inside dimensions of chamber: 25x30 cm. Complete, with thermometer, thermo-regulator, burner and asbestos mat .....

20 00

**9939/7—Water Bath Drying Oven with Rings.** This oven is of the same construction as No. 9939/6, but has in addition a set of concentric rings on the top for the insertion of flasks, cups, etc. Complete with thermometer, thermo-regulator, burner and asbestos mat .....

24 00

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

**\*9939/8—Water Bath, simple.** For a small amount of imbedding, such as is done by the physician, this is a very useful bath. It has two imbedding cups, three infiltration vials and a shelf for warming instruments or watch-glass imbedding. The cups are provided with handles and have glass covers; one is deep and the other watch-glass shaped. The bath is made of polished copper, which is tin-lined, has a false bottom of sheet-iron and is enclosed with a sheet-iron base. Tubulations for thermometer and thermo-regulator are provided. Bath proper: 17.5 cm. long, 9 cm. wide and 8.5 cm. deep; base 20 cm. high. Complete with thermometer, thermo-regulator, burner and asbestos mat..... \$ 13 25

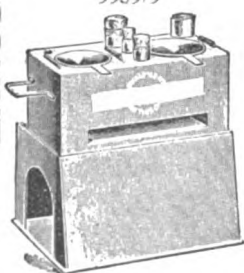
**\*9939/9—Water Bath, Mabon's.** This is a convenient bath designed for use in the laboratory of the St. Lawrence State Hospital. It was made with a view of economizing both space and heat. Flasks of different sizes may be placed in openings provided by two sets of concentric rings, five in number and giving sizes from 2.5 to 15 cm. An extra ring, having 22 holes for medium sized test tubes may be used to replace one set of rings. The bath has tubulations for thermometer and filling. It is made of tin-lined copper and has enclosed base (not shown in illustration) and a false bottom of sheet-iron. Size: 38 cm. long, 17.7 cm. wide and 12.7 cm. deep; base 20.3 cm. high. An oil burner may be satisfactorily used with this bath. Complete with thermometer and gas burner..... 13 25

**Water Baths, of metal, of any design, made to order at lowest prices.**

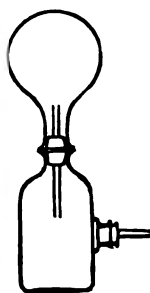
REMEMBER OUR DISCOUNT.



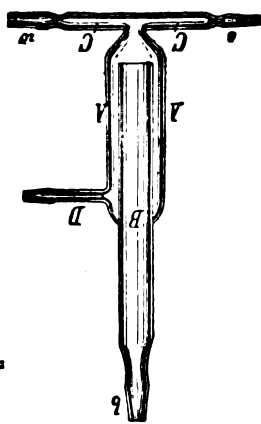
9939/8



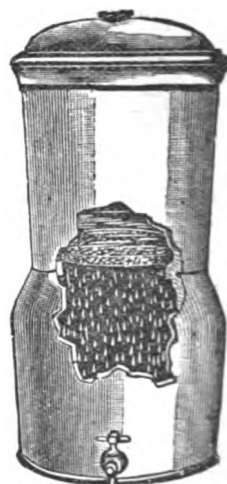
9939/8



9940



9940/1



9945/2

**\*9940—Water Bath Regulator, of glass.** 500 cc. 1000 cc.  
\$1 25 1 55

**\*9940/1—Water Regulator, new pattern (Fischer's Zeitschrift, 1888, p. 369)..** 2 25

**\*9945/2—Water-Filters, the water filtering through a porous plate; with hard rubber faucet; more easily cleaned than any other filters. The best of water filters made.**

Approximate capacity.... 14 21 28 42 liters in 24 hours.  
Each ..... \$5 00 6 65 8 35 10 80

**Separate parts:**

Upper Jar only.....	\$1 00	1 65	2 30	3 40
Lower Jar only.....	1 00	1 65	2 30	3 40
Cover only.....	30	30	35	45
Porous Plate only.....	1 20	1 50	1 90	2 10
Rubber Faucet only.....	1 65	1 65	1 65	1 65

**\*9945/3—Water-Filters, No-Germ, No. 1.** A Pressure filter for faucet with  $\frac{1}{2}$  inch (19 mm.) hose pipe thread. Capacity 2 liters in 5 minutes without cleaning, 4 liters in one hour without cleaning, 12 liters in half a day without cleaning, 24 liters in one day if cleaned once.

Each \$4 50; per dozen ..... \$ 45 00

Extra filter-stones for same; each \$1 00; per dozen ..... 10 00

**\*9945/4—Ditto, ditto, of same capacity.** It can be fitted to any faucet.

Each \$4 90; per dozen ..... 49 00

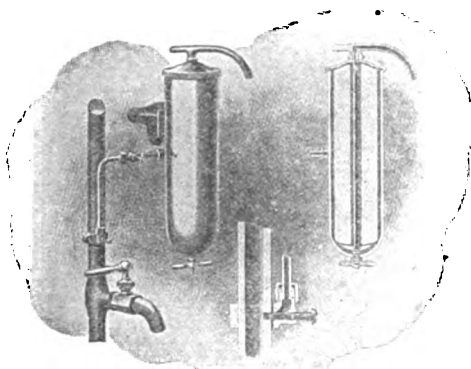
Extra filter-stones for same; each \$1 00; per dozen ..... 10 00

**\*9945/5—Water-Filters, Imperial, Series A.**

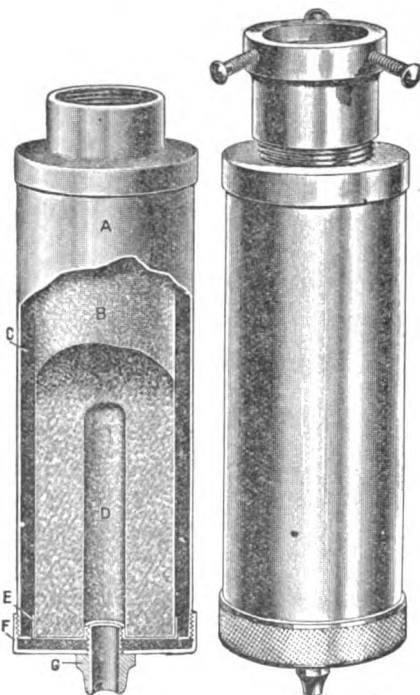
The water connection is very easily accomplished and can be made by an inexperienced person. The filter casing is galvanized and finished in silver bronze. By unscrewing the thumb-screw, the filter-cylinder may be withdrawn for cleaning, which is easily and quickly accomplished by means of a hand brush.

No. 1.—Size of Filtering Case 7.5x25 cm. long ..... 13 30

No. 2.—Size of Filtering Case 10x38 cm. long ..... 20 00



9945/5



9945/3

9945/4

**APPROXIMATE EQUIVALENTS:**

1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3800 cc.; 1 av. oz.=28 gm.; 1 pound=450 gm.

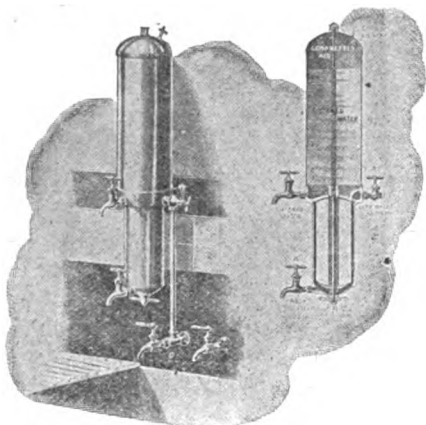
**\*9945/6—Water-Filters, Imperial, Series D.**

The supply of water to be filtered is generally taken from behind the faucet, as illustrated, by a special fitting made for that purpose. The water envelopes and passes through the filtering cylinder from the outside to the center and enters the storage reservoir, the air in which, being confined, is compressed by the incoming water until a pressure equal to that in the supply pipe is attained. By contact with and consequent absorption of this air, the water is further purified and emerges beautifully sparkling and aerated. The cleansing is automatically attained by opening the wash faucet for a few seconds, causing the compressed air in the reservoir to recoil and drive filtered water at a high pressure back through the filtering cylinder, throwing off the sediment that had accumulated on its surface. This wash is amplified by a strong jet of water from the supply pipe impinging against the surface of the cylinder through a spray fixed in the casing. The cylinder may be exposed instantly for brushing when desired by removing the lower casing through the medium of the thumb-screw. (Illustr. p. 452).

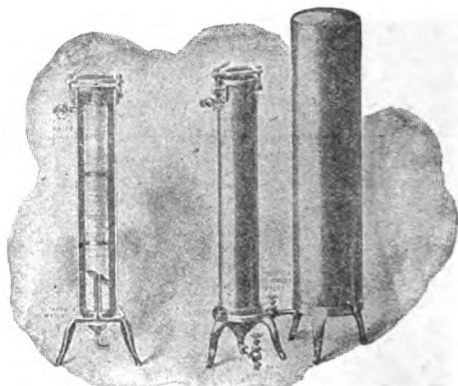
	Measurement at extreme points.	Filtering Cylinder.	Size of Reservoir.	Capacity per hour.	Price.
No. 1.....	15 x 71 cm.	9 x 19 cm.	13 x 38 cm.	5.75 liters.	30 00
No. 2.....	15 x 89 cm.	9 x 29 cm.	13 x 50 cm.	9.5 liters.	36 65

\*9945/7—**Water-Filters, Imperial, large size**, with separate reservoir, the filter and reservoir each on three feet. Prices include a filter brush.

Series C.	Number of Cylinders	Size of Cylinders.	Capacity in 24 hours.	Size of Reservoir.	Price with Reservoir.	Price without Reservoir.
No. 1 .....	1	10 x 90 cm.	380 liters.	68 liters.	\$76 65	63 30
No. 2 .....	1	10 x 120 cm.	495 "	114 "	98 30	75 00
No. 3 .....	2	10 x 90 cm.	760 "	152 "	150 00	121 65
No. 4 .....	2	10 x 120 cm.	990 "	152 "	173 30	145 00
No. 5 .....	3	10 x 90 cm.	1140 "	152 "	203 30	175 00



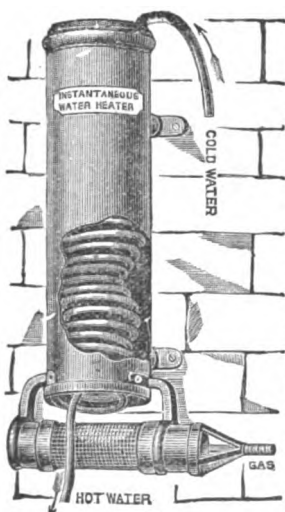
9945/6



9945/7

REMEMBER OUR DISCOUNT.

\*9946—**Water Heater, Fletcher's Instantaneous, No. 147.** Giving



9946

instantly a continuous supply of pure water at any temperature, from boiling to lukewarm, free from the products of combustion, and suitable for all purposes. Designed to hang over lavatory bowl or sink. In two sizes; large size, height 48 cm., projection from wall 20.3 cm.; small size, height 45.7 cm., projection from wall 15.2 cm. This water heater is more especially intended for lavatory purposes and the general odd work of laboratory and domestic purposes, where hot water is constantly wanted quickly. The gas supply should be 9.5 mm. ( $\frac{3}{8}$  in.) pipe. It will work equally well, but at a proportionately slower rate, with any gas supply, however small. The speed at which the water runs rules its temperature. It will heat 475 cc. of water per minute from 50° to 130° Fahrenheit. The duty of larger sizes is about double that above given. It is too small to heat a large bath efficiently.

**Recent Improvements**—A pilot light attachment, which keeps the water in the coil constantly warm, and automatically lights the burner when the gas is turned on; also a coupled gas and water tap, operated by one lever, a turn of which lights the burner and gives an immediate flow of warm water. The pilot light can be furnished

alone or in combination with the coupled taps. Consumption of gas: large size 40 feet (=1.1 cbmtr.), small size 20 feet (=0.55 cbmtr.), per hour.

No. 147—Water Heater, small size, without taps .....	\$ 18 30
No. 147A—Water Heater, small size, with gas tap and pilot light .....	21 65
No. 147B—Water Heater, small size, with coupled taps and pilot light .....	31 65
No. 147C—Water Heater, large size, without taps .....	25 00
No. 147D—Water Heater, large size, with gas tap and pilot light .....	28 30
No. 147 E—Water Heater, large size, with coupled taps and pilot light .....	40 00
For gasoline gas, extra .....	1 65
Nickel-plating, extra .....	1 65

**\*9947—Water Heater, Fletcher's New Instantaneous, No. 247.**

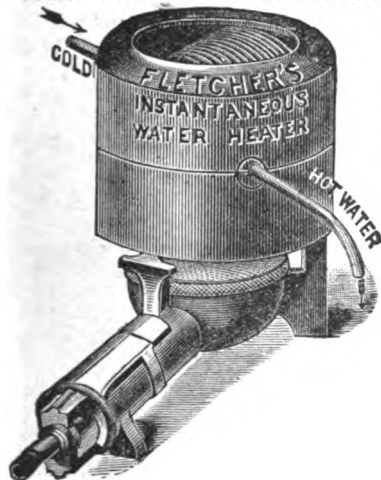
This gives, when connected with a cistern or water tap, hot water in three seconds after the gas is lighted, either boiling, hot, warm or cold, the water being pure and fit for cooking purposes. It will deliver sufficient hot water for washing hands in one minute. It is simple, cheap, not liable to get out of order or wear out, and is equal in power to the small size Instantaneous Water Heater No. 9946.

No. 247—Water Heater, without burner.....

With burner (No. 3867), complete, as engraved.....

For gasoline gas, extra.....

\$ 5 00  
8 30  
1 65

**\*9947/1—Water Heater. Instantaneous Water Heater, No. 347.**

9947

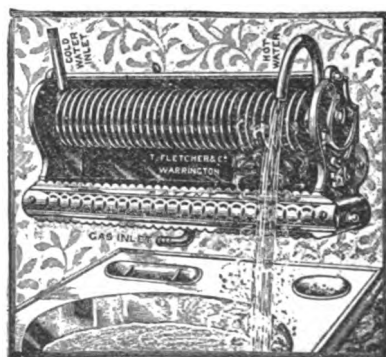
Horizontal pattern for lavatories. The water passage is surrounded by a series of copper disks which are integral with it. A large surface is thus exposed to the flame, and is also allowed to become hot enough to admit of direct flame contact, thus greatly increasing its value as heating surface. This construction also entirely does away with any dripping from condensation. The Water Heater is very compact, being only 35.5 cm. wide and 15.2 cm. high over all. It will deliver 950 cc. of water per minute heated from 60° to 125°. There will be no odor from imperfect combustion unless too large a flame is used and the apparatus is driven beyond its capacity. It is very well calculated to withstand rough usage, and will not be injured by overheating if the gas is allowed to burn without a flow of water.

No. 347. Water Heater as illustrated, without cocks.....

33 30



9950/23 &amp; 25



9947/1

9948, etc.—**Water Wheels.** See Catalogue of Physical Apparatus.

9950—**Water Hammers.** See Catalogue of Physical Apparatus.

**WEIGHTS:** All our own weights are marked ~~10~~ and are warranted.

\*I 9950/23—**Weights of Precision, finest imported, OF FIRST QUALITY,** in polished velvet lined mahogany boxes. Weights smaller than 1 Gramme are made of **Platinum** and are provided with a glass cover; the larger weights are **heavily gold plated.** Forceps with ivory points.

**1 Milligramme to 10 20 50 100 200 500 1000 Grammes.**

Per set..... \$9 00 10 00 12 00 14 50 18 00 23 50 32 00

\*I 9950/25—Ditto, ditto, same as No. 9950/23, but the larger weights from 1 Gramme upward are **heavily platinum-plated,** instead of gold-plated.

**1 Milligramme to 10 20 50 100 200 500 1000 Grammes.**

Per set..... \$10 00 11 50 13 60 16 00 20 00 26 00 36 25

**APPROXIMATE EQUIVALENTS:**  
1 inch = 25 mm; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
1 quart = 1000 cc.; 1 gallon = 3600 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

**9951—Weights of Precision.**

In French polished boxes lined with velvet, every piece fitted separately and adjusted to the utmost accuracy. Brass weights lacquered. The fractions of the gramme are platinum, except those below 20 milligrammes, which are made of aluminium. **Heil's No. 1.** Platinum gramme and down to  $\frac{1}{10}$  milligramme.....

\$ 9 00

**9951/1—Ditto, ditto, Heil's No. 1A.** Two  $\frac{1}{10}$ , two  $\frac{1}{20}$  and one  $\frac{1}{100}$  mgrm. ....

1 00

**9952—Ditto, ditto, Heil's No. 2.** Ten gramme piece and down to  $\frac{1}{10}$  milligramme.....

10 00

**9953—Ditto, ditto, Heil's No. 3.** Two 20 gramme pieces and down to 1 milligramme. 3 riders.....

11 00

**9954—Ditto, ditto, Heil's No. 4.** Fifty gramme piece and down to 1 milligramme. 3 riders.....

12 50

**9955—Ditto, ditto, Heil's No. 5.** Hundred gramme piece and down to 1 milligramme. 3 riders.....

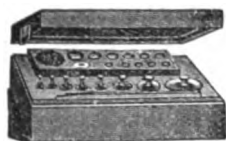
14 00

**9956—Ditto, ditto, Heil's No. 6.** Two hundred gramme piece and down to 1 milligramme. 3 riders.....

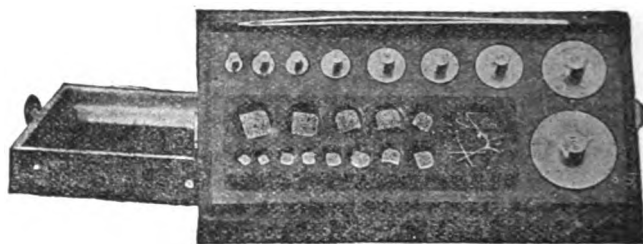
18 00

**9957—Ditto, ditto, Heil's No. 7.** Five hundred gramme piece and down to 1 milligramme. 3 riders.....

23 00



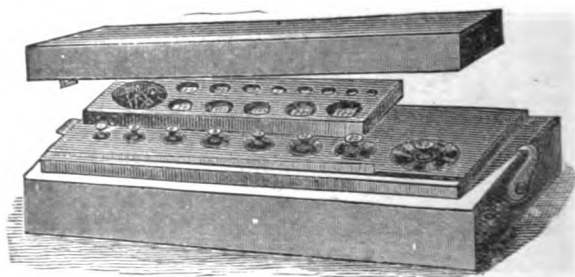
9981



9955



9994



9973

**9958—Ditto, ditto, Heil's No. 8.** Five kilo piece and down to 1 milligramme.....

70 00

**9959—Ditto, ditto, Heil's No. 9.** Ten grain piece and down to  $\frac{1}{1000}$  grain.....

9 00

**9959/1—Ditto, ditto, Heil's No. 10.** One thousand grain piece and down to  $\frac{1}{1000}$  grain. 3 riders.....

14 00

**9959/2—Ditto, ditto, Heil's No. 9A.** Two  $\frac{1}{1000}$ , two  $\frac{1}{1000}$  and one  $\frac{1}{1000}$  grain pieces.....

1 00

**9959/3—Ditto, ditto, Heil's No. 19.** Set of Assay Ton Weights, 4 A. T. down to  $\frac{1}{10}$  A. T. ....

6 00

**9959/4—Ditto, ditto, Heil's No. 19A.** Set of Assay Ton Weights, 1 A. T. down to  $\frac{1}{10}$  A. T. ....

4 00

**9959/5—Ditto, ditto, Heil's No. 19B.** Set of Assay Ton Weights, 2 A. T. down to  $\frac{1}{10}$  A. T. ....

4 50

**9959/6—Ditto, ditto, Heil's No. 19C.** Set of Assay Ton Weights containing 1 A. T.,  $\frac{1}{10}$ ,  $\frac{1}{100}$ ,  $\frac{1}{1000}$ ,  $\frac{1}{10000}$  and  $\frac{1}{100000}$  A. T. ....

4 00



**9959/7—Weights of Precision, adjusted to the utmost accuracy, Heil's No. 36.** Gold Assay Weights. One  $\frac{1}{4}$  gramme down to  $\frac{1}{4}$  milligramme..... \$ 15 00

(The Assay Ton weights have been introduced by Prof. Dr. C. F. Chandler, of the School of Mines, Columbia College, New York, where they are now in use for convenience in the assay of ores. The weight denominated by Dr. Chandler, "One A. T.," equals 29.1666 grammes, and contains consequently as many milligrammes as there are troy ounces in a ton avoirdupois of 2,000 pounds. Therefore, if one A. T. of ore assays one milligramme, the ton contains one troy ounce.)

All Heil's Weights are adjusted according to the French standard and the ounce troy, 31.1033 grammes.

**\*9973—Weights of Precision, Kohlbusch's, in French polished boxes, lined with velvet, every piece fitted separately.** Brass weights lacquered; the fractions of the gramme are platinum, except those below 20 milligrammes, which are made of aluminium; most accurately adjusted, with forceps. All riders are furnished 12 mgrms. unless ordered otherwise (Illustr. p. 454).

If platinum plated to % more.	No. 1. Platinum grm. piece and down to $\frac{1}{10}$ mgrm.....	10 00
	No. 2. One 10 grm. piece and down to $\frac{1}{10}$ mgrm.....	11 00
	No. 3. One 10 grm. piece and down to 1 mgrm., and 3 riders....	11 00
	No. 4. One 20 grm. piece and down to 1 mgrm., and 3 riders....	12 00
	No. 5. Two 20 grm. pieces and down to 1 mgrm., and 3 riders....	13 00
	No. 6. One 50 grm. piece and down to 1 mgrm., and 3 riders....	15 50
	No. 7. One 100 grm. piece and down to 1 mgrm., and 3 riders....	17 50
	No. 8. One 200 grm. piece and down to 1 mgrm., and 3 riders....	22 00
	No. 9. One 500 grm. piece and down to 1 mgrm., and 3 riders....	28 00
	No. 10. One 1000 grm. piece and down to 1 mgrm., and 3 riders....	35 00
	No. 11. One platinum 10 grain piece and down to $\frac{1}{1000}$ grain.....	10 00
	No. 12. One 1000 grain piece and down to $\frac{1}{1000}$ grain, 3 riders....	16 00

**9976—Weights of Precision, Troemner's (fig. 136).** 1 platinum grm. down to  $\frac{1}{10}$  mgrm..... 9 50

9977—Ditto, ditto, ditto, (fig. 136). 10 grm. down to 1 mgrm..... 10 00

9979—Ditto, ditto, ditto, (fig. 136). 20 grm. down to 1 mgrm..... 11 00

9980—Ditto, ditto, ditto, (fig. 136). Two 20 grm. pieces down to 1 mgrm., and 3 riders..... 12 00

**\*9981—Ditto, ditto, ditto, (fig. 136).** 50 grm. down to 1 mgrm., and 3 riders. (Illustr. p. 454)..... 14 00

9982—Ditto, ditto, ditto, (fig. 136). 100 grm. down to 1 mgrm., and 3 riders.. 16 00

9983—Ditto, ditto, ditto, (fig. 136). 200 grm. down to 1 mgrm., and 3 riders.. 18 50

9984—Ditto, ditto, ditto, (fig. 136). 500 grm. down to 1 mgrm., and 3 riders.. 23 00

9985—Ditto, ditto, ditto, (fig. 136). 1000 grm. down to 1 mgrm., and 3 riders 28 00

9987—Ditto, ditto, ditto, (fig. 136). 10 platinum grains to  $\frac{1}{1000}$  grain..... 9 50

9988—Ditto, ditto, ditto, (fig. 136). 10 platinum grains to  $\frac{1}{1000}$  grain..... 10 50

9989—Ditto, ditto, ditto, (fig. 136). 100 platinum grains to  $\frac{1}{1000}$  grain..... 10 00

9990—Ditto, ditto, ditto, (fig. 136). 1000 platinum grains to  $\frac{1}{1000}$  grain, and 3 riders..... 12 00

9991—Ditto, ditto, ditto, (fig. 136). 1000 platinum grains to  $\frac{1}{1000}$  grain, and 3 riders..... 13 00

9992—Ditto, ditto, ditto, (fig. 136). 1000 platinum grains to  $\frac{1}{1000}$  grain, and 3 riders..... 14 00

9993—Ditto, ditto, ditto, (fig. 136). 4 Assay Tons down to  $\frac{1}{10}$  Assay Ton..... 6 00

**\*9994—Weights, Standard, Troemner's, fig. 30; in French polished velvet-lined box. Each weight fitted separately. Weights are of brass, and of the finest finish; adjustment is in strict conformity with the U. S. standard at Washington. (Illustr. p. 454).**

Size, 4 lbs. to $\frac{1}{4}$ oz.....	16 00
Size, 10 lbs. to $\frac{1}{4}$ oz.....	24 00
Size, 25 lbs. to $\frac{1}{4}$ oz.....	30 00
Size, 50 lbs. to $\frac{1}{4}$ oz.....	90 00

**9995—Weights of Precision, single.**

	1 grm.	$\frac{1}{2}$ grm.	200	100	50	20	10	5	2	1	$\frac{1}{2}$	$\frac{1}{10}$	$\frac{1}{100}$	mgrm.
Each.....	\$1 25	90	75	70	60	25	25	25	25	25	25	25	25	
	10	5	2	1	$\frac{1}{2}$	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	$\frac{1}{10000}$	$\frac{1}{100000}$	$\frac{1}{1000000}$	$\frac{1}{10000000}$	$\frac{1}{100000000}$	grains.
Each.....	\$1 35	1 00	85	80	55	25	25	25	25	25	25	25	25	

**\*9998/1—Weights, Gramme, Heil's No. 10A.** One gramme piece down to 1 milligramme..... 5 00

**\*9998/2—Ditto, ditto, Heil's No. 10B.** Ten gramme piece down to 1 milligramme..... 6 50

**APPROXIMATE EQUIVALENTS:**  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=450 grm.

REMEMBER OUR DISCOUNT.

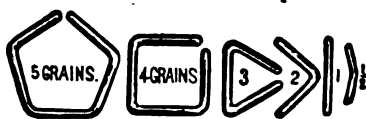
9998/3—Weights, Gramme, Heil's No. 10C. Twenty gramme piece down to 1 milligramme .....	\$ 7 50
9999—Ditto, ditto, Heil's No. 11. Fifty grm. piece down to 1 mgrm. ....	9 00
9999/1—Ditto, ditto, Heil's No. 12. Hundred grm. piece and down to 1 centigramme .....	5 50
9999/2—Ditto, Ditto, Heil's No. 13. Hundred grm. piece and down to 1 mgrm. ....	10 00
9999/3—Ditto, ditto, Heil's No. 14. Five hundred grm. piece and down to 1 grm., in block .....	6 00
9999/4—Ditto, ditto, Heil's No. 15. Five hundred grm. piece down to 1 centigramme, in mahogany case .....	9 50
9999/5—Ditto, ditto, Heil's No. 16. One kilo and down to 1 grm., in mahogany block .....	8 50
9999/6—Ditto, ditto, Heil's No. 17. One kilo and down to 1 centigramme, in mahogany case .....	12 00
9999/7—Ditto, Grain, Heil's No. 18. One thousand grain piece and down to $\frac{1}{10}$ grain .....	10 00
10010—Ditto, Gramme, Troemner's, fig. 24. Twenty grammes to 1 centigramme .....	3 50
10011—Ditto, ditto, fig. 24. Fifty grammes to 1 centigramme .....	5 00
*10012—Ditto, ditto, fig. 24. One hundred grammes to 1 centigramme .....	6 00
10013—Ditto, ditto, fig. 24. 500 grammes to 1 centigramme .....	10 00
10014—Ditto, ditto, fig. 24. 500 grammes to 1 milligramme .....	12 00
10015—Ditto, ditto, fig. 24. 1 kilogramme to 1 gramme .....	10 00
10016—Ditto, ditto, fig. 24. 1 kilogramme to 1 centigramme .....	12 00
10017—Ditto, ditto, fig. 24. 1 kilogramme to 1 milligramme .....	14 00
10020—Ditto, ditto, fig. 24. 1 Troy ounce to $\frac{1}{4}$ grain .....	3 50
10021—Ditto, ditto, fig. 24. 2 Troy ounces to $\frac{1}{4}$ grain .....	5 00
10022—Ditto, ditto, fig. 24. 5 Troy ounces to $\frac{1}{4}$ grain .....	7 50
10023—Ditto, ditto, fig. 24. 10 Troy ounces to $\frac{1}{4}$ grain .....	10 00
10024—Ditto, ditto, fig. 24. 20 Troy ounces to $\frac{1}{4}$ grain .....	13 00
10025—Ditto, ditto, fig. 24. 50 Troy ounces to $\frac{1}{4}$ grain .....	17 00
10026—Ditto, ditto, fig. 24. 100 Troy ounces to $\frac{1}{4}$ grain .....	26 00



10012



10027



10045/1

*10027—Weights, Troy, Troemner's. Fig. 230. Adjusted to the standard of 480 grains to the ounce. In polished covered block; each weight fitted separately; the set consists of the following weights: 12 oz., 8 oz., 4 oz., 2 oz., 1 oz., $\frac{1}{2}$ oz., 5, 4, 3, 2, 1 pennyweights of brass; 10 grains to $\frac{1}{10}$ grain of platinum. Price per set .....	20 00
10029—Weights, Apothecary, Heil's No. 20. One Troy ounce down to $\frac{1}{4}$ grain .....	3 50
10029/1—Ditto, ditto, Heil's No. 21. Twenty grammes and down to 1 centigramme .....	3 50
10029/2—Ditto, ditto, Heil's No. 22. One thousand grains and down to $\frac{1}{10}$ grain .....	7 75
10029/3—Ditto, ditto, Heil's No. 23. Two pounds and down to $\frac{1}{4}$ oz. avoirdupois, in mahogany block .....	8 50
10029/4—Ditto, ditto, Heil's No. 24. Four pounds and down to $\frac{1}{4}$ oz. avoirdupois, in mahogany block .....	12 50
*10040—Ditto, Prescription, Troemner's, fig. 23. Very desirable weights for the dispensing counter. In mahogany box; each weight fitted separately, and accurately adjusted. (Illustr. p. 457). 20 gramme piece to 1 centigramme .....	1 75
300 grain piece to $\frac{1}{10}$ grain .....	1 75
*10045/1—Ditto, ditto, Troemner's Aluminium Grain Weights, fig. 55, $\frac{1}{2}$ to 5 grains; per set .....	25
Per dozen sets .....	2 50

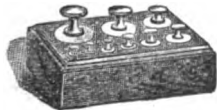
- \*10046—**Weights, Prescription.** Decimal grain weights. Fig. 61. 50 grains down to 10 grains; nickel-silver ..... \$ 0 70
- \*10050—Ditto, ditto, ditto. Square Aluminium Grain Weights, fig. 56,  $\frac{1}{2}$  to 10 grains; per set ..... 40
- \*10051—**Weights,** avoirdupois fractions of ounces. Fig. 60. These weights are the fractions of the avoirdupois ounce.  $\frac{1}{2}$  ounce and down to  $\frac{1}{16}$  avoirdupois ounce; nickel-silver ..... 85
- 10052—**Weights, Gramme,** 500 milligrammes to 10 milligrammes; in paper box ..... 95
- 10053—Ditto, ditto, 500 milligrammes to 1 milligramme ..... 1 25
- \*10053/1—**Weights, Gramme, 500 to 1 Milligramme;** 500 to 10 mgrms. of german silver, 5 2, and 1 mgrm. of Aluminium; in paste-board box. Per set. Per dozen sets. Per 50 sets. Per 100 sets.  
                   \$0 50                   5 00                   19 00                   37 50
- \*10054—**Weights, Block, Troy, Troemner's.** Fig. 37. Solid brass in cherry block.  
                   1 oz. to  $\frac{1}{2}$  grain ..... 1 15  
                   Two 2 oz. to  $\frac{1}{2}$  grain ..... 2 00  
                   5 oz. to  $\frac{1}{2}$  grain ..... 2 90  
                   10 oz. to  $\frac{1}{2}$  grain ..... 4 65



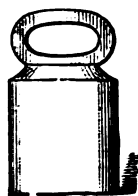
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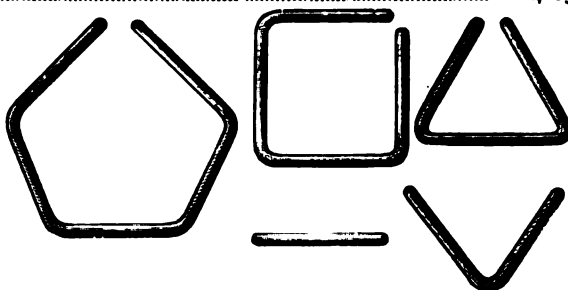
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10055



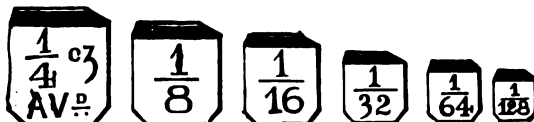
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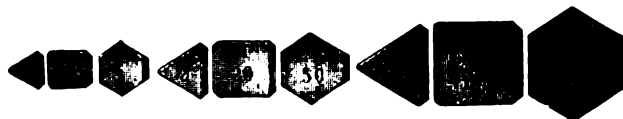
10046



10050



10051



10053/1

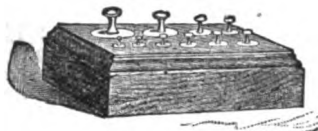
- \*10055—**Weights, Block, Troy, Troemner's,** fig. 231. In solid walnut block, lined with poplar to avoid shrinkage. They are highly finished and accurately adjusted.  
                   5 oz. down to  $\frac{1}{2}$  grain ..... 2 90  
                   10 oz. down to  $\frac{1}{2}$  grain ..... 4 65  
                   20 oz. down to  $\frac{1}{2}$  grain ..... 8 20  
                   30 oz. down to  $\frac{1}{2}$  grain ..... 10 55  
                   50 oz. down to  $\frac{1}{2}$  grain ..... 14 70  
                   100 oz. down to  $\frac{1}{2}$  grain ..... 21 15  
                   200 oz. down to  $\frac{1}{2}$  grain ..... 31 75  
                   500 oz. down to  $\frac{1}{2}$  grain ..... 59 50
- \*10056—**Weights, Troy, single iron Troy weights.** Fig. 39. These are commonly used with the large Bullion balances.  
                   500 oz. Troy weight, each ..... 7 50  
                   300 oz. Troy weight, each ..... 4 50  
                   200 oz. Troy weight, each ..... 3 00  
                   100 oz. Troy weight, each ..... 1 50

**APPROXIMATE EQUIVALENTS:**  
 1 inch = 25 mm.; 1 foot = 30 cm.; 1 fluid oz. = 30 cc.; 1 pint = 500 cc.  
 1 quart = 1000 cc.; 1 gallon = 3800 cc.; 1 av. oz. = 28 grm.; 1 pound = 450 grm.

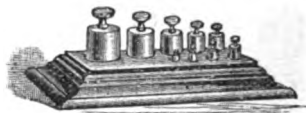
- \*10060—Weights, Brass, Block, Avoirdupois, Troemner's, fig. 42.**  
In oiled walnut block, lined with poplar to avoid shrinkage. They are thoroughly finished in every respect.
- |                            | Brass. | Nickel-plated. |
|----------------------------|--------|----------------|
| 1 lb. to $\frac{1}{4}$ oz. | \$4 60 | 5 85           |
| 2 lb. to $\frac{1}{4}$ oz. | 6 35   | 7 60           |
| 4 lb. to $\frac{1}{4}$ oz. | 8 10   | 10 00          |

These weights are also furnished in Eastlake blocks, made of Hungarian ash.

- \*10061—Weights, Brass, Block, Avoirdupois, Troemner's, Fig. 45.**  
In highly finished ebony block; weights set in recesses on top of block, and are heavily plated with nickel.
- |   |         |
|---|---------|
| 1 lb. to $\frac{1}{4}$ oz., nickel-plated | \$ 6 30 |
| 2 lb. to $\frac{1}{4}$ oz., nickel-plated | 8 10    |
| 4 lb. to $\frac{1}{4}$ oz., nickel-plated | 10 50   |



10060



10061



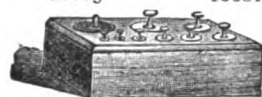
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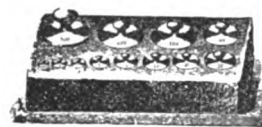
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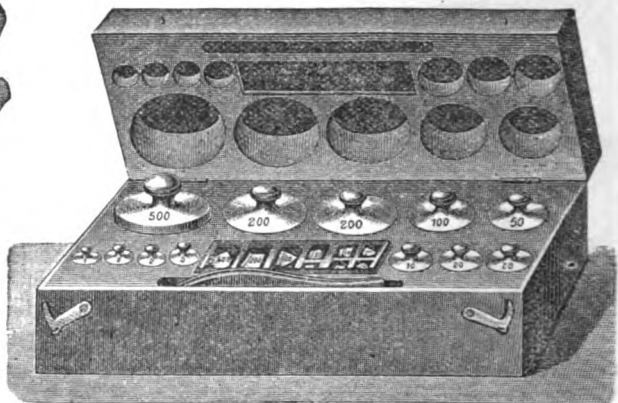
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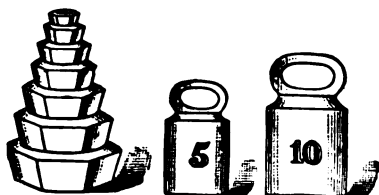
10063



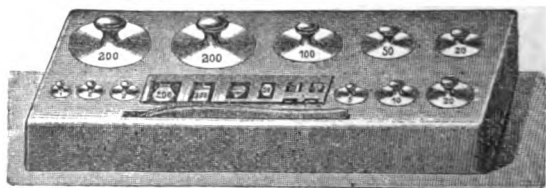
10063/2 &amp; 10067



10063/1



10066



10063/1

- \*10062—Weights, Brass, Block, Avoirdupois, Troemner's, Fig. 50.**  
Solid brass weights in walnut or cherry block.
- |                            | brass. | nickel. |
|----------------------------|--------|---------|
| 1 lb. to $\frac{1}{4}$ oz. | \$2 60 | 3 50    |
| 2 lb. to $\frac{1}{4}$ oz. | 4 10   | 5 25    |
| 4 lb. to $\frac{1}{4}$ oz. | 5 80   | 7 60    |
- \*10063—Weights, Gramme, Troemner's, Fig. 20.** Of solid brass, in cherry block.

20 gramme piece and down to 1 centigramme	70
50 gramme piece and down to 1 centigramme	1 25
100 gramme piece and down to 1 centigramme	1 85
200 gramme piece and down to 1 centigramme	2 60
500 gramme piece and down to 1 centigramme	4 60
1000 gramme piece (1 kilo) and down to 1 centigramme	6 90

\*10063/1—WEIGHTS, GRAMME, BEST GERMAN; quality next to weights of precision, small weights under glass cover; with forceps. (Illustr. p. 458).

	20	50	100	200	500	1000	grms. to 1 mgrm.
I In polished wooden block....	\$1 95	2 20	2 50	3 50	5 25	7 50	
In polished box with cover..	2 95	3 30	4 10	5 25	7 00	8 75	

\*10063/2—WEIGHTS, GRAMME, IN BLOCK. (Illustr. p. 458).

1 kilogramme to 1 gramme; total weight 2000 grammes; per set....	\$ 3 50
500 grammes to 1 gramme; total weight 1000 grammes; per set.....	2 25
250 grammes to 1 gramme; total weight 500 grammes; per set.....	1 65
100 grammes to 1 gramme; total weight 200 grammes; per set.....	1 10
50 grammes to 1 gramme; total weight 100 grammes; per set.....	70
20 grammes to 1 gramme; total weight 50 grammes; per set.....	55

10063/3—WEIGHTS, GRAMME, IN BLOCK. Same as No. 10063/2, but with small weights to 1 centigramme.

1 kilogramme to 1 centigramme; total weight 2000 grms.; per set..	4 85
500 grammes to 1 centigramme; total weight 1000 grms.; per set..	3 10
200 grammes to 1 centigramme; total weight 500 grms.; per set....	2 10
100 grammes to 1 centigramme; total weight 200 grms.; per set....	1 45
50 grammes to 1 centigramme; total weight 100 grms.; per set.....	85
20 grammes to 1 centigramme; total weight 50 grms.; per set.....	65

I 10064/4—WEIGHTS, GRAMME, IN BLOCK WITH COVER; otherwise same as No. 10063/3.

1 kilogramme to 1 centigramme; total weight 2000 grms.; per set	6 75
500 grammes to 1 centigramme; total weight 1000 grms.; per set..	4 65
200 grammes to 1 centigramme; total weight 500 grms.; per set....	3 15
100 grammes to 1 centigramme; total weight 200 grms.; per set....	2 25
50 grammes to 1 centigramme; total weight 100 grms.; per set....	1 50
20 grammes to 1 centigramme; total weight 50 grms.; per set.....	1 25

\*10065—Weights, Nest, Avoirdupois, Troemner's. Very accurately adjusted. (Illustr. p. 458). Brass cased (fig. 54). Sealed iron (fig. 155).

1 lb. to $\frac{1}{2}$ oz.....	\$1 40	\$0 70
2 lb. to $\frac{1}{2}$ oz.....	2 10	1 05
4 lb. to $\frac{1}{2}$ oz.....	3 50	1 75
7 lb. to $\frac{1}{2}$ oz. (15 lbs. in all) .....		2 80
10 lb. to $\frac{1}{2}$ oz. (25 lbs. in all) .....		4 20

\*10066—Weights, Gramme, Nest, Troemner's. Fig. 33. (Illustr. p. 458).

1 kilogramme and down to 10 grammes.....	1 75
2 kilogrammes and down to 10 grammes.....	2 80
5 kilogrammes and down to 10 grammes.....	5 60
10 kilogrammes and down to 10 grammes.....	6 50

\*10067—Weights, Brass, Block, German, for mercantile use. (Illustr. p. 458).

1 kilogramme to 1 gramme; per set .....	7 50
500 grammes to 1 gramme; per set.....	5 25

10069—Weights, Troy, brass, Heil's No. 25, in mahogany box, velvet lined, 1 oz. to  $\frac{1}{4}$  grain .....

10069/1—Ditto, ditto, Heil's No. 26, two oz. pieces to $\frac{1}{4}$ grain.....	3 50
10069/2—Ditto, ditto, Heil's No. 27, 5 oz. to $\frac{1}{4}$ grain .....	6 25
10069/3—Ditto, ditto, Heil's No. 28, 10 oz. to $\frac{1}{4}$ grain .....	7 75
10069/4—Ditto, ditto, Heil's No. 29, 20 oz. to $\frac{1}{4}$ grain.....	10 00
10069/5—Ditto, ditto, Heil's No. 30, 50 oz. to $\frac{1}{4}$ grain.....	15 00
10069/6—Ditto, ditto, Heil's No. 31, two 100 oz. pieces to 1 grain.....	20 00
10069/7—Ditto, ditto, Heil's No. 32, 200 oz. to 1 grain .....	30 00
10069/8—Ditto, ditto, Heil's No. 33, two 500 oz. pieces.....	40 00
10069/9—Ditto, ditto, Heil's Single Iron Troy Weights.....	45 00

500 ounce Troy Weight .....	6 60
200 ounce Troy Weight .....	2 85
100 ounce Troy Weight .....	1 70

\*10081—Weights, Troy Cup, Troemner's, fig. 138. (Illustr. p. 458).

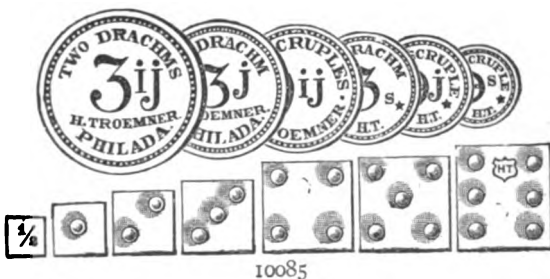
64 ounces to $\frac{1}{4}$ ounce.....	10 35
32 ounces to $\frac{1}{4}$ ounce.....	6 35
16 ounces to $\frac{1}{4}$ ounce.....	4 65
8 ounces to $\frac{1}{4}$ ounce.....	3 50
4 ounces to $\frac{1}{4}$ ounce.....	1 75
10 pennyweights to $\frac{1}{4}$ grain.....	60
$\frac{1}{2}$ pennyweight to $\frac{1}{4}$ grain.....	30

APPROXIMATE EQUIVALENTS:  
1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=28 grm.; 1 pound=70 grm.

- \*10085—Weights, Prescription, German. 2 drachms to  $\frac{1}{4}$  grain..... \$ 0 25  
 10090—Weights, Normal Sugar, for Polariscope, 26.048 and 13.024; per set \$2.00; each..... 1 00  
 10091—Weights, Diamond, Heil's.  
 No. 34—One hundred carat piece down to  $\frac{1}{4}$  carat..... 7 50  
 No. 35—One three hundred carat piece down to  $\frac{1}{4}$  carat..... 9 50  
 \*10093—Weights, Gold Coin Weights, Troemner's, fig. 81 (least current). In mahogany velvet-lined box; twenty dollar piece and down to one dollar, including grain weights, all U. S. Mint standard..... 5 00

All weights, Troemner's, not enumerated in the above list, will be furnished at manufacturers' prices; and weights, manufactured by L. Oertling, London, L. Reimann, Berlin, and G. Kern & Sohn, will be imported to order at lowest rates.

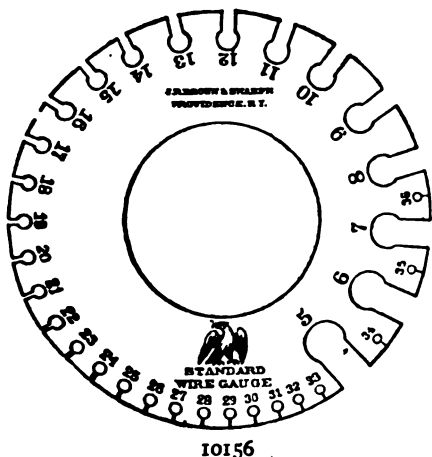
- 10100—Wicks, for Berzelius' and Rose's lamps; per doz..... 30  
 10105—Ditto, for alcohol lamps; per bundle..... 07  
 10110—Ditto, for blow-pipe lamps; per doz..... 25  
 10115—Wick Holders, for alcohol lamps. small. medium. lge.  
 Each..... \$0 07 10 12 $\frac{1}{2}$   
 10120—Wire, of copper, for alloy, pure; per kilo..... 2 50  
 10125—Ditto, of copper, pure, from No 14 to 20 22 24 26 28 30  
 Per kilo..... \$1 60 1 75 1 85 2 10 2 40 2 75  
 10126/1, etc. —Wire, on spools, soft Copper, Spring Brass and Steel. See Catalogue of Physical Apparatus.  
 10129—Wire, of german silver. No. 16 18 20 22 24 26 28 30  
 Per kilo..... \$4 10 4 10 4 30 4 75 5 20 6 00 6 60 7 70  
 Per hecto..... 50 50 55 60 65 75 80 95



- 10130—Wire, copper, insulated, cotton covered, on 1-lb. spools.  
 No. 12 14 16 18 20 22 24 26  
 Single covered, per lb. \$0 67 74 76 89 1 02 1 18 1 35 1 65  
 Double covered, per lb. 74 79 81 99 1 11 1 43 1 71 2 07  
 Triple covered, per lb. 85 95 1 05  
 No. 28 30 32 34 36 38 40  
 Single covered, per lb. \$2 02 2 47 2 92 4 25 6 55 13 50 19 50  
 Double covered, per lb. 2 54 3 10 3 42 5 13 7 40 14 25 22 50  
 Less than one pound 15% advance.  
 10131—Wire, copper, insulated, Annunciator Wire.  
 No. 12 14 16 18 20 22  
 Per Kilo..... \$1 30 1 39 1 48 1 59 1 70 1 87  
 10135—Wire, copper, insulated, silk covered, on 1-lb. spools.  
 No. 18 20 22 24 26 28  
 Single covered, per lb. \$1 73 1 77 1 95 2 34 3 15 3 57  
 Double covered, per lb. 2 35 2 42 2 64 3 20 4 32 4 85  
 No. 30 32 34 36 38 40  
 Single covered, per lb. \$4 45 4 70 6 15 10 50 16 50 30 00  
 Double covered, per lb. 6 05 6 80 7 95 13 35 21 75 34 50  
 Less than one pound 15% advance.  
 10141—Wire, copper, insulated, Rubber covered.  
 No. 12 14 16 18  
 Per meter..... \$ 40 27 22 19  
 Per 30 meters..... 7 95 5 40 4 25 3 75  
 Per 300 meters..... 39 65 27 00 21 25 18 75

REMEMBER OUR DISCOUNT.

- 10145—**Wire, of iron, pure**, for standardizing; per hecto, \$0 25; per kilo. \$ 1 65  
 10146—**Wire, of iron, chemically pure**, for standardizing; on spools.  
 Per hecto, 65 cts., per kilo. 5 15  
 10150—**Wire, OF STEEL, BEST PIANO**, in rolls of about 4 ounces;  
 per 4 oz. roll, \$0 45; per lb. \$1 75; per kilo. 3 85  
 10152—**Wire, Nickel**; per hecto, ~~\$0 45~~; per kilo. ~~5 75~~ 8.35  
 10153—**Wire, Picture**. See Catalogue of Physical Apparatus.  
 10155—**Wire, of platinum**.  
 All sizes from No. 8 to No. 36. (No. 25 to 29 used for blow-  
 pipe work). At lowest market price.  
 \*10156—**Wire Gauges, American Standard**.  
 No. 0 to 36 No. 5 to 36  
 Each \$5 25 3 75  
**Wollaston's Illustration of the low-pressure steam-**  
**engine.** See Catalogue of Physical Apparatus.



10156



10158

- \*10158—**Wrenches, Coe's knife handle**; the strongest, most durable and convenient wrench in the market; black finish.

Length.....	15	20	25	30	38	45	53 cm.
Will open.....	22	31	44	54	66	76	105 mm.
Each.....	\$ 1 13	1 25	1 50	1 75	3 00	3 75	4 50
Per doz.....	11 25	12 50	15 00	17 50	30 00	37 50	45 00

**X-Ray Apparatus.** See Catalogue of Physical Apparatus.

- 10160—**Zinc**, for hydrogen lamps No. 6853; each.....

30

**APPROXIMATE EQUIVALENTS:**  
 1 inch=25 mm.; 1 foot=30 cm.; 1 fluid oz.=30 cc.; 1 pint=500 cc.  
 1 quart=1000 cc.; 1 gallon=3600 cc.; 1 av. oz.=26 grm.; 1 pound=450 grm.

## APPENDIX.

## 10170/1

## ASSAY OUTFIT.

1 Ore Scale No. 2624/3 .....	\$ 15 00
1 Assay Balance, either No. 2556 or 2585 .....	55 00
1 set Assay Ton Weights, No. 9959/3 or 9993 .....	6 00
1 set Weights of Precision, 1 grm. to 10 mgrm. No. 9951 .....	9 00
1 Morgan-Harvey Furnace No. 5593 .....	60 00
2 Muffles, for same, No. 7350 .....	2 66
25 Battersea Crucibles F .....	2 60
100 Scorifiers 64 mm. ....	1 95
1 steel Cupel Mould, 32 mm., No. 7295 .....	1 90
1 pr. iron Crucible Tongs, 60 cm., No. 9350 .....	1 45
1 pr. steel Cupel Tongs No. 9370 .....	1 25
1 pr. steel Scorifier Tongs No. 9385 .....	1 25
1 iron Scorification Mould with 9 cavities, No. 7330 .....	1 00
1 cast-steel Hammer, 400 grm., No. 6065 .....	1 50
1 pair steel Forceps 12 cm., No. 5400 .....	20
1 Iron Mortar, goblet-shape, 2 lit. ....	1 10
1 brass wire Sieve, 17.8 cm., wooden frame, 40 mesh, No. 8370 .....	80
1 brass wire Sieve, 17.8 cm., wooden frame, 80 mesh., No. 8370 .....	1 10

1 porcelain Mortar No. 2, deep, No. 7255 .....	\$ 0 80
1 horn Mixing Scoop, large, No. 8300 .....	25
1 horn Spatula, 14 cm., No. 8465 .....	14
1 steel Spatula, 10 cm., No. 8480 .....	33
1 horn Spoon, 20 cm., No. 8600 .....	33
1 Assay Button Brush No. 3590 .....	62
1 pr. steel Button Pliers, oval flat nose, No. 7752 .....	65
2 Parting Flasks, 30cc., No. 5240 .....	30
4 Battersea Annealing Cups No. 4580 .....	60
1 glass Alcohol Lamp, 125 cc., No. 6770 .....	45
6 sheets glazed Paper, asst'd colors..	17
450 grm. c. p. Nitric Acid in gl. st. bot.	46
2.25 kilo. pure Assayers' Litharge .....	1 00
1.35 kilo. c. p. granulated Lead .....	1 00
450 grm. chem. pure Sheet-Lead .....	47
3.6 kilo. French Bone-ash .....	1 82
2.25 kilo. best white calcined Carbonate of Sodium, tin can incl. ....	83
900 grm. Borax Glass, ground .....	1 07
450 grm. pure Nitrate of Potassium .....	20
450 grm. Argol .....	20
<hr/>	
\$175 45	

**Packed in shipping order \$180 00**

If No. 5588 Furnace is substituted for No. 5593, there will be an additional charge of \$8 00.

If No. 5590 Furnace, F size, is substituted for No. 5593, a reduction of \$15 00 will be made.

If No. 5589 Furnace is substituted for No. 5593, a reduction of \$26 00 will be made.

## 10171/1

## ASSAY OUTFIT.

1 Ore Scale No. 2624/3 .....	\$ 15 00
1 Assay Balance, either No. 2556 or 2585 .....	55 00
1 set Assay Ton Weights No. 9959/3 or 9993 .....	6 00
1 set Weights of Precision, 1 grm. to 10 mgrm., No. 9951 .....	9 00
1 Battersea Assay Furnace No. 5590, size K .....	90 13
3 Muffles for same .....	6 51
50 Battersea Colorado Crucibles A .....	2 29
50 Battersea Crucibles F .....	5 21
200 Scorifiers 64 mm. ....	3 90
1 steel Cupel Mould, 32 mm., No. 7295 .....	1 90
1 pr. iron Crucible Tongs, 60 cm., No. 9350 .....	1 45
1 pr. steel Cupel Tongs No. 9370 .....	1 25
1 pr. steel Scorifier Tongs No. 9385 .....	1 25
1 iron Scorification Mould with 9 cavities, No. 7330 .....	1 00
1 cast-steel Hammer, 400 grm., No. 6065 .....	1 50
1 pr. steel Forceps, 12 cm., No. 5400 .....	20
1 iron Mortar, goblet-shape, 4 lit. ....	2 15
1 brass wire Sieve, 17.8 cm., 40 mesh .....	80
1 brass wire Sieve, 17.8 cm., 80 mesh .....	1 10

1 porcelain Mortar, No. 3, deep, No. 7255 .....	\$ 1 05
1 Anvil of chilled iron, 4.5 kilo., No. 1310 .....	2 25
1 horn Mixing Scoop, large, No. 8300 .....	25
2 horn Spatulas, 15 cm., No. 8465 .....	34
2 steel Spatulas, 10 and 15 cm., No. 8480 .....	80
1 horn Spoon, 20 cm., No. 8600 .....	33
1 Assay Button Brush No. 3590 .....	62
1 pr. steel Button Pliers, oval flat nose, No. 7752 .....	65
3 Parting Flasks, 30 cc., No. 5240 .....	45
½ doz. Battersea Annealing Cups No. 4580 .....	90
2 Berlin porcelain Evaporating Dishes, 100 cc., No. 4065 .....	50
1 Berlin porcelain Evaporating Dish, 175 cc., No. 4065 .....	37
1 Test tube Rack No. 8925, with six 16 cm. tubes .....	72
1 Alcohol Lamp, 125 cc., No. 6770 .....	45
1 Nest of 3 Beakers, No. 1 to 3, No. 2940 .....	44
3 Stirring Rods, 20 cm., No. 8170 .....	15
1 Wash Bottle, 350 cc., No. 3471 .....	50

REMEMBER OUR DISCOUNT.



## 10171/1

## ASSAY OUTFIT—(Continued.)

2 glass Funnels, 8 cm., No. 5475.....	\$0 38	2.25 kilo. pure Assayers' Litharge.....	\$1 00
1 package cut white Filters, 15 cm., No. 5174.....	27	2.25 kilo. c.p. granulated Lead.....	1 67
1 sheet each red and blue Litmus Paper.....	10	900 grms. chem. pure Sheet-lead.....	94
1 iron three-ring Stand No. 8862.....	1 10	4.5 kilo. French Bone-ash.....	2 27
12 sheets heavy Glazed Paper, assorted.....	30	4.5 kilo. best white calc. Carbonate of Sodium, tin can incl.....	1 13
1.35 kilo c.p. Nitric Acid, in gl. st. bot.....	98	1.35 kilo. Borax Glass, ground.....	1 60
450 grms. c. p. Hydrochloric Acid, in gl. st. bot.....	45	000 grms. pure Nitrate of Potassium.....	40
450 grms. c. p. Sulphuric Acid, in gl. st. bot.....	45	450 grms. white Cyanide of Potassium No. 1, tin can incl.....	84
450 grms. Ammonium Hydrate, concentrated c. p., in gl. st. bot.....	52	450 grms. Argol.....	20
			<b>\$231 07</b>
		<b>Packed in shipping order.</b>	<b>\$240 00</b>

If No. 5588 Furnace is substituted for No. 5590K, a reduction of \$25 00 will be made.

If No. 5589 Furnace is substituted for No. 5590K, a reduction of \$57 00 will be made.

If No. 5593 Furnace is substituted for No. 5590K, a reduction of \$30 00 will be made.

## 10172/1

## ASSAY OUTFIT.

1 Ore Scale No. 2624/6.....	\$22 00	1 Assay Button Brush No. 3590.....	\$0 62
1 Assay Balance No. 2559.....	95 00	1 pr. steel Button Pliers, oval flat nose, No. 7752.....	65
(Assay Balance No. 2595 \$80 00, or 2601/20 \$100.00).		1 double Magnifying Lens, 25 mm., oval.....	83
1 set Assay Ton Weights No. 9959/3.....	6 00	1 Bar Magnet, 15 cm.....	45
1 set Weights of Precision, 1 grm. to 10 mgrm., No. 9951.....	9 00	1 pr. Cutting Shears, 25 cm., No. 8350.....	2 00
(Weights of Precision No. 9976 \$9.50).		1 Vise with 5 cm. jaws No. 9860.....	1 35
		1 tin Sampler No. 8220.....	1 50
		½ doz. Parting Flasks No. 5282, 70 cc.....	1 08
1 Battersea Assay Furnace No. 5590, size K.....	90 13	1 doz. Battersea Annealing Cups.....	1 40
3 Muffles for same.....	6 51	2 Berlin porcelain Evaporating Dishes, 100 cc., No. 4965.....	50
100 Battersea Colorado Crucibles A.....	4 12	2 Berlin porcelain Evaporating Dishes, 175 cc., No. 4965.....	74
50 Battersea Colorado Crucibles B.....	3 29	1 Test-tube Rack No. 8925, with 12 tubes.....	94
300 Scorifiers 64 mm.....	5 85	1 Alcohol Lamp, 125 cc., No. 6770.....	45
25 Scorifiers 77 mm.....	83	1 Nest of 4 Griffin's Beakers No. 1 to 4, No. 2950.....	1 00
25 Scorifiers 102 mm.....	1 25	4 assorted Convex Covers, 63 to 101 mm., No. 4460.....	49
1 brass Cupel Mould, latest pattern, No. 7305, 38 mm.....	4 75	4 Stirring Rods, 20 cm., No. 8170.....	15
1 pr. iron Crucible Tongs, 80 cm., No. 9355.....	1 90	1 Wash Bottle, 350 cc., No. 3471.....	56
1 pr. steel Cupel Tongs No. 9370.....	1 25	2 glass Funnels, 8 cm., No. 5475.....	38
1 pr. steel Scorifier Tongs No. 9385.....	1 25	1 glass Funnel, 10 cm., No. 5475.....	25
1 each Poker and Scraper.....	1 15	2 packs cut white Filters, 15 cm., No. 5174.....	54
1 iron Scorification Mould with 9 cavities, No. 7330.....	1 00	2 sheets each red and blue Litmus Paper.....	20
1 cast-steel Hammer, 400 grms., No. 6065.....	1 50	12 sheets heavy glazed Paper, assorted colors.....	30
1 pr. steel Forceps No. 5410.....	1 00	1 iron 3-ring Stand No. 8862.....	1 10
1 iron Mortar, goblet-shape, 4 lit.....	2 15	2 doz. assorted Sample Bottles with corks, 30 and 60 cc., No. 3250.....	1 41
2 brass wire Sieves, 17.8 cm., 40 and 60 meshes, No. 8370.....	1 65	225 grms. German Glass-tubing.....	31
1 Box Sieve, 25 cm., 80 meshes, No. 8381.....	3 50	1 Plattner's nickel-plated Blow-pipe with platinum jet, No. 3111.....	2 80
1 porcelain Mortar No. 3, deep, No. 7255.....	1 05	1 Plattner's Blow-pipe Hammer with wooden handle, No. 6035.....	75
1 Anvil of chilled iron, 4.5 kilos, No. 1310.....	2 25	1 Anvil for blow-pipe use No. 1270.....	63
2 horn Mixing Scoops, large, No. 8300.....	50	1 Charcoal Borer and Magnet combined No. 3205.....	55
2 horn Spatulas, 15 cm., No. 8465.....	34	1 piece Platinum Foil, 2.5x5 cm., 1/27 mm. thick.....	1 80
2 steel Spatulas, 10 and 15 cm., No. 8480.....	80		
2 horn Spoons, 15 and 20 cm., No. 8600.....	52		

## 10172/1

## ASSAY OUTFIT—(Continued.)

7.5 cm. Platinum Wire No. 26.....	\$0 35	1.35 kilos chem. pure Sheet-lead.....	\$1 41
1 Plattner's nickel-plated Blow-pipe Lamp with patent swivel, No. 6825	5 30	9 kilos French Bone-ash.....	4 53
1 Agate Mortar, 65 mm., No. 7200..	3 45	6.75 kilos best white calcined So- dium Carbonate, tin can incl.....	1 62
1.35 kilo c. p. Nitric Acid, in gl. st. bot.....	98	2.25 kilos Borax Glass, ground.....	2 67
450 grms. c. p. Hydrochloric Acid, in gl. st. bot.....	45	1.35 kilos pure Potassium Nitrate.....	60
450 grms. c. p. Sulphuric Acid, in gl. st. bot.....	45	900 grms. white Potassium Cyanide No. 1, tin can incl.....	1 59
450 grms. Ammonium Hydrate, con- centrated, c. p., in gl. st. bot.....	52	900 grms. Argol.....	40
4.5 kilos pure Assayers' Litharge.....	2 00		
4.5 kilos c. p. granulated Lead.....	3 33		\$325 92

Packed in shipping order. \$336 00

If Furnace No. 5588 is substituted for No. 5590K, a reduction of \$25 00 will be made.  
 If Furnace No. 5589 is substituted for No. 5590K, a reduction of \$57 00 will be made.  
 If Furnace No. 5593 is substituted for No. 5590K, a reduction of \$30 00 will be made.

## 10173/1

## ASSAY OUTFIT.

1 Ore Scale No. 2624/6.....	\$22 00	2 horn Spatulas, 15 cm., No. 8465...	\$0 34
1 Assay Balance No. 2558/2 (No. 2601/22, \$300.00).....	175 00	2 horn Spoons, 15 and 20 cm., No. 8600.....	52
1 set Assay Ton Weights No. 9959/3 or 9993.....	6 00	1 Assay Button Brush No. 3590.....	62
1 set Weights of Precision, 10 grms. to 1/10 mgrm., No. 9952.....	10 00	3 camel hair Brushes, swan quill, No. 3600.....	45
1 German Horn Pan Scale No. 2700 with 9 cm. pans, for weighing fluxes.....	2 20	1 camel hair Brush, large, for bal- ances, 5 cm., No. 3610.....	50
1 set Gramme Weights No. 10040, 20 grms. to 1 ctgrm.....	1 75	1 pr. polished steel Button Pliers No. 7751.....	60
		1 pr. steel Cutting Pliers No. 7780, 12 cm. ....	95
		1 double oval Magnifying Lens, 31 mm., No. 7016.....	1 08
		1 Bar Magnet, 15 cm.....	45
		1 pr. Cutting Shears, 25 cm., No. 8350.....	2 00
		1 Vise with 5 cm. jaws, No. 9860.....	1 35
		1 tin Sampler No. 8220.....	1 50
		1/2 doz. Parting Flasks No. 5282, 70 cc.	1 08
		1 doz. Annealing Cups, Battersea.....	1 40
		6 Royal Berlin Evaporating Dishes, 100, 175 and 300 cc., two of ea h.....	3 01
		1 Test-tube Rack No. 8925, with 12 tubes.....	94
		1 Test-tube Holder No. 4100.....	18
		1 Test-tube Brush, sponge end, No. 3620.....	12
		2 Alcohol Lamps, 125 cc., No. 6770..	90
		12 Flasks for copper determination No. 5283, 150 cc.....	3 00
		1 Rose's Lamp with mahogany base, No. 6800.....	7 50
		1 Nest of 6 Griffin's Beakers No. 2950, No. 1 to 6.....	1 75
		6 assorted convex Covers, No. 4460, 63 to 127 mm.....	88
		6 Stirring Rods, 25 cm.....	25
		1 shallow Sand Bath No. 8240, 15 cm.	25
		1 Washing Bottle No. 3471, 350 cc.	56
		3 glass Funnels No. 5475, 8, 9 and 10 cm.....	57
		1 Pack cut white Filters, 11 cm., Swedish No. 3.....	27
		2 Packs cut white Filters, 15 cm., Swedish No. 3.....	96
		2 sheets each red and blue Litmus paper.....	20

REMEMBER OUR DISCOUNT.

## 10173/1

## ASSAY OUTFIT—(Continued.)

1 Quire heavy glazed Paper, black.	\$0 50	1 Test-lead Measure No. 6990	\$0 60
3 Flasks, 250, 500 and 750 cc., No. 5263	1 27	1 Cupel Holder with 2 moulds and stamp, No. 6110	1 90
1 iron 3-ring Stand, No. 8862	1 10	3.15 kilos c. p. Nitric Acid, in gl. st. bot.	1 73
3 doz. assort. Sample Bottles, with corks, 30, 60 and 125 cc., No. 3250	2 31	900 grms. c. p. Hydrochloric Acid, in gl. st. bot.	70
225 grms. German Glass-tubing	31	900 grms. c. p. Sulphuric Acid, in gl. st. bot.	76
1 Plattner's nickel-plated Blow-pipe with platinum jet, No. 3111	2 80	900 grms. Ammonium Hydrate, c. p. concent., in gl. st. bot.	87
1 nickel-plated Blow-pipe Hammer with metal handle, No. 6045	95	1 Keg (11½ kilos) pure Assayers' Litharge	4 00
1 Anvil and Mortar combined, No. 1280	2 25	9 kilos c. p. granulated Lead	6 67
1 Plattner's nickel-plated Blow-pipe Lamp with patent swivel, No. 6825	5 30	2.25 kilos chem. pure Sheet-Lead	2 34
1 Charcoal Borer, club-shaped, No. 3190	80	18 kilos French Bone-ash	9 06
1 Charcoal Borer and magnet combined, No. 3205	55	9 kilos best white calcined Sodium Carbonate, tin can incl.	2 10
1 pr. nickel-plated Forceps, platinum pointed, French style, No. 5435	3 35	4.5 kilos Borax Glass, ground	5 33
1 piece Platinum Foil, 2.5x5 cm., 1/4 mm. thick	1 80	2.25 kilos pure Potassium Nitrate	1 00
7.5 cm. Platinum Wire No. 26	35	1.35 kilos white Potassium Cyanide, No. 1, tin can incl.	2 25
1/2 doz. pieces Charcoal for blow-pipe, No. 4030	40	1.35 kilos Argol	60
2 Ivory Spoons No. 8610	60		
			\$501 02
		<b>Packed in shipping order</b>	<b>\$515 00</b>

If furnace No. 5588 is substituted for No. 5590K, a reduction of \$25 00 will be made.

If furnace No. 5589 is substituted for No. 5590K, a reduction of \$57 00 will be made.

If furnace No. 5593 is substituted for No. 5590K, a reduction of \$30 00 will be made.

## 10178/1

## SET OF APPARATUS,

As used in the Agricultural Experiment Stations,  
consisting of:

1 Analytical Short Beam Balance No. 2512, for 100 grammes, with Apparatus for Rider	\$ 50 00	1 Round File, 100 mm., with handle	\$0 30
1 Set Weights of Precision No. 9955, 100 grammes to 1 milligramme, 3 Riders	14 00	1 Funnel Support, wood, for four funnels, No. 8856	1 20
1 Chemical Balance No. 2624/3, for 160 grammes, with set screws and level	18 00	1 Retort Stand, iron, 3 rings, No. 8862	1 10
1 Set Gramme Weights in Block, No. 10063, 100 grammes to 1 centigramme	1 85	25 sheets Filter Paper No. 5175	52
1 Set (9) Porcelain Evaporating dishes No. 4971	\$3 10	24-125 cc. German Tinctures, No. 3300	2 58
1 Hydrometer for light liquids, No. 6100	65	12-500 cc. German Tinctures	4 30
1 Hydrometer for heavy liquids, No. 6155	65	1/4 kilo. German Glass Tubing	69
1 Mohr's Burette with pinchcock 50 cc. in 1/16	1 85	1/2 dozen Glass Stirrers, 20 and 25 cm.	25
1 Mohr's Burette with pinchcock 100 cc. in 1/8	2 50	1 Horn Spoon with Spatula, No. 8600, 15 cm.	19
1 Iron Support for two burettes, No. 8760	1 95	4 feet Rubber Tubing for connections, No. 9826, 3 and 4.7 mm.	69
2-40x5 cm. lipped Cylinders, No. 4770	1 70	6 Boh. Normal Flasks No. 5263, 35, 70, 150, 250, 350 and 500 cc.	1 66
1 graduated Cylinder, 100 cc., No. 4790	80	1 Carbonic Acid Apparatus, Fresenius & Will, No. 1380	55
2 Iron Wire Triangles No. 9430	13	2 graduated Flasks No. 5315, 100 and 500 cc.	1 12
2 Pieces Brass Wire Gauze, 15x15 cm., No. 30	21	1 Liebig's Condenser, 50 cm., with Support, No. 4311	4 30
2 Iron Tripods No. 9465, 2 rings	1 10	1 nickel-plated Blow-pipe, with platinum tip, No. 3111	2 80
24 Test Tubes, 13 and 16 cm.	95		
1 Test Tube Stand No. 8940	75		
1 Desiccator No. 4810	2 00		
1 Triangular File, 127 mm., with handle	35		

## 10178/1

## SET OF APPARATUS—(Continued.)

1 pr. Steel Forceps, 11 cm., No. 5400	\$0 14	1 10 cc. Platinum Crucible No. 4640	\$15 00
3 Volumetric Pipettes No. 7615, 5, 10, 50 cc.	94	1 Washing Bottle, 500 cc., No. 3470	70
1 Air Bath, copper, 15x20 cm., No. 1690	6 15	1 Combustion Furnace, 15 burners, No. 5725	31 35
5 grammes Platinum Foil	7 50	1 Nitrogen Bulb, W. & V., No. 7400	44
½ Meter Platinum Wire No. 26	2 20	2 Paper Scale Chemical Thermometers, 100 and 200° C., No. 9224	2 25
1 dozen each wide mouth Bottles No. 3250, with corks, 30, 60, and 125 cc.	2 33	6 Funnels, 5, 7, 8, 10, 13, 16 cm., No. 5475	1 40
2 Mohr's Pinchcocks, medium, nickel-plated, No. 4141	18	1 nest lipped Beakers, No. 1 to 5, No. 2950	1 30
1 Porcelain Mortar, 13 cm., with pestle, No. 7250	95	1 dozen 50 mm. Watch Glasses No. 9880	30
2 stoppered Retorts No. 8055, 60 and 125 cc.	56	1 15 cm. Water Bath, copper, with rings	1 75
1 pair Paper Scissors No. 8290, medium	85	1 Glass Alcohol Lamp, 125 cc., No. 6770	45
2 Royal Berlin Crucibles No. 4650, Nos. 00 and 0, and covers	54	1 Rose's Alcohol Lamp, with stand and rings, No. 6800	7 50
Balances and Weights			83 85
Apparatus			125 72

TOTAL ..... \$209 57

Packed, ready for shipment ..... \$212 00

## 10179/1 APPARATUS AND CHEMICALS NECESSARY FOR STEEL ANALYSIS,

According to Blair and Troilius, in quantities sufficient for considerable work.

All Chemicals strictly c. p. and put up in bottles.

(Please note that we furnish with this set a much finer and more expensive balance than other dealers.)

1 Platinum-plated Analytical Balance No. 2515/6, to weigh up to 200 grms. and sensible to ⅒ milli-grm., including a set of platinum-plated weights of precision, 100 gm. to ⅒ mgrm.	\$135 00
1 Balance, Robervahl No. 2667—No. 3	6 00
1 set weights, 1 kilo to 1 ctgrm., No. 10063/3	4 85

Acid, acetic, 2.25 kilos.  
 Ditto, chromic, 450 grms.  
 Ditto, hydrochloric, 13.5 kilos.  
 Ditto, hydrofluoric, 2.25 kilos.  
 Ditto, molybdic, 1.35 kilos.  
 Ditto, nitric, 22 kilos.  
 Ditto, oxalic, 2.25 kilos.  
 Ditto, sulphuric, 8.1 kilos.  
 Alcohol, 470 cc.  
 Ammonium Chloride, 900 grms.  
 Ditto Hydrate, 12.6 kilos.  
 Ditto Oxalate, 115 grms.  
 Ditto Carbonate, 225 grms.  
 Asbestos, 450 grms.  
 Barium Carbonate, 225 grms.  
 Barium Chloride, 450 grms.  
 Bromine, 450 grms.  
 Calcium Chloride, (dry), granulated, 900 grms.  
 Copper and Ammonium Chloride, 4.4 kilos, in 2.2 kilo bottles.

Copper Sulphate (common), 2.25 kilos, (in paper).  
 Iron Sesquichloride, 450 grms.  
 Ditto Protosulphate, by alcohol, 2.25 kilos.  
 Iron and Ammon. Protosulphate, 450 grms.  
 Iron Sulphide, fused in sticks, pure, 900 grms.  
 Iodine, 30 grms.  
 Magnesium Chloride, 450 grms.  
 Mercury, 450 grms.  
 Microcosmic Salt, 225 grms.  
 Potassium Carbonate, 225 grms.  
 Ditto Bi-chromate, 900 grms.  
 Ditto Chlorate, 2.25 kilos.  
 Ditto Ferrocyanide, 115 grms.  
 Ditto Ferricyanide, 115 grms.  
 Ditto Hydrate by alcohol, 900 grms.  
 Ditto Permanganate, Reagent, 450 grms.  
 Pumice Stone, 450 grms.  
 Silver Nitrate, 15 grms.  
 Sodium Acetate, 450 grms.  
 Ditto Carbonate, anhydrous, c. p., 900 grms.  
 Ditto Thiosulphate, 900 grms.  
 Zinc, metallic, granulated, 225 grms.  
 Zinc, common, granulated, 900 grms.  
 Beeswax, yellow, 225 grms.  
 Sealing Wax, 115 grms.  
 5 qrs. Paper, white, wrapping.  
 5 qrs. Paper, Filtering, J. H. Munkell's Swedish No. 3.  
 3 pck. Paper, Filtering, J. H. Munkell's Swedish, No. 0, cut, c. p., 11 cm.

REMEMBER OUR DISCOUNT.

**10179/1 APPARATUS AND CHEMICALS NECESSARY FOR STEEL ANALYSIS.**

(Continued.)

- 2 pck. Paper, Filtering, J. H. Munktel's Swedish, No. o, cut, c. p., 9 cm.  
 4 pck. Paper, Filtering, J. H. Munktel's Swedish No. o, cut, c. p., 7 cm.  
 6 Brushes, camel-hair, No. 3600, extra large.  
 1 Ditto, ditto, No. 3610, 5 cm.  
 6 Bulbs according to Troilius, for sulphur determination, improved form.  
 1 Burette, Mohr's, 50 cc., graduated to  $\frac{1}{10}$  cc., with pinch-cock.  
 1 Burette, Mohr's, 100 cc., graduated to  $\frac{1}{10}$  cc., with pinch-cock.  
 2 Carboys, for distilled water.  
 1 Condenser, block tin worm in zinc tank, to be attached to steam pipe, No. 4340—11  $\frac{1}{2}$  lit.  
 4 gross Corks, to fit drilling bottles.  
 1 gross Corks, assorted, small.  
 450 grms. Rubber Stoppers, assorted.  
 6 Crucibles, porcelain, Royal Berlin, No. oo.  
 4 Crucibles, platinum, each 20 grms.—80 grms.  
 12 nests Beakers, Griffin's, wide form, lipped, No. 1 to 6.  
 12 nests Beakers, Griffin's, wide form, lipped, No. 1 to 3.  
 12 Beakers, conical No. 2060, Bohemian glass,  $\frac{1}{2}$  liter capacity.  
 1 Bellows, Fletcher's new pattern, No. 10A, foot blower.  
 1 Blast Lamp, Bunsen's, No. 3790.  
 3 Burners, Fletcher's, solid flame, No. 3867, No. 47, large size.  
 6 Burners, Finkner's, No. 3805.  
 12 Bottles, Reagent, 500 cc., glass stoppered, No. 3280.  
 12 Bottles, Reagent, 1 lit., glass stoppered, No. 3280.  
 4 gross Bottles, common, wide mouth for drillings, 60 cc.  
 4 Bottles, Wulff's, 2 necked, 500 cc.  
 1 Mortar, Agate, 90 mm.  
 1 Ditto, Wedgewood, No. 0000—73 mm.  
 1 Ditto, ditto, No. 1—127 mm.  
 1 Ditto, iron, 7.6 lit., goblet shaped.  
 1 Pr. Crucible Tongs No. 9326.  
 1 Pipette No. 7615—100 cc.  
 2 Ditto, No. 7615—50 cc.  
 1 Ditto, No. 7615—10 cc.  
 4 Platinum Triangles, each 9 grms., 36 grms.  
 1 Plate, porcelain, for testing, No. 7710.  
 2 Test-tube Racks No. 8940.  
 2 Sieves, brass, No. 8370, 50 mesh and 80 mesh.  
 1 Burette Stand No. 8781.  
 6 Funnel Supports No. 8855.  
 1 Ring Stand No. 8862 with 3 rings.  
 4 Cylinders, Erdmann, No. 4730.  
 1 double graduated Cylinder No. 4795, with glass stopper, 1000 cc.  
 1 Ditto, ditto, 25 cc.  
 4 Dishes, porcelain, 525 cc., No. 4985.  
 2 Ditto, ditto, 120 cc.  
 4 Files No. 5080, triangular, 10 cm.  
 1 Bohemian Normal Flask No. 5263—8 lit.  
 6 Ditto, 2 lit.  
 12 Ditto, 1 lit.  
 6 Ditto, 500 cc.  
 12 Ditto, 500 cc., graduated with glass stopper, labeled from A to L.  
 24 Funnels No. 5475—7 cm.  
 24 Ditto, 4 cm.  
 4 Ditto, 10 cm.  
 2 Ditto, 23 cm.  
 4 each Ditto, for filtering with asbestos, No. 9615, 19, 25 and 28  $\frac{1}{2}$  mm.  
 1 Measuring Glass No. 5970—16 oz.  
 12 Convex Covers No. 4460—63 mm.  
 12 Ditto, 101 mm.  
 12 Ditto, 127 mm.  
 2 Hydrometers, one for above 1000 and one for below 1000.  
 1 Hydrometer Jar, 45x5 cm.  
 12 Boxes Labels, gummed, No. 221.  
 2 sets Reagent Labels No. 6735.  
 4 Tripods No. 9460.  
 1 Thermometer, 360 deg. Cent., No. 9210.  
 12 Rubber Finger Cots.  
 2 Funnel-tubes with stop-cock, No. 558c, 60 cc.  
 60 Test-tubes 130x15 mm., No. 9110.  
 1 set of 2 Carbon Tubes No. 9610, 25 cc. in  $\frac{1}{16}$ .  
 1  $\frac{1}{2}$  kilo. Glass tubing, assorted.  
 1  $\frac{1}{2}$  kilo. Glass Rod, assorted, No. 8160.  
 720 cm. Rubber Tubing, vulcanized, 6 mm., No. 9826,  
 360 cm. Rubber Tubing, pure, 3 mm.  
 360 cm. Rubber Tubing, pure, 4.7 mm.  
 1 Desiccator No. 4810.  
 1 Magnet No. 6931, 10 cm.  
 1 pr. Scissors No. 8290, med.  
 1 steel Hammer No. 6070, 400 grms.  
 6 Goetz' Phosphorus Tubes No. 2280.

Total for apparatus, balances and weights ..... \$598 75

Total for chemicals or reagents ..... 101 65

Total ..... \$700 40

Boxes and packing at moderate rates.

10180

**SET OF APPARATUS AND CHEMICALS,****Suitable for Young Beginners in Chemistry.**

The chemicals are put up in 21 bottles 30 cc. and 41 paper boxes No. 3560, 44x17 mm. and the whole is packed in a wooden box..... \$14 15

**Apparatus.**

Glass Retort, 125 cc.,  
Alcohol Lamp No. 6781, 60 cc.,  
1 lit. wide mouth Bottle for deflagration,  
Glass Cover for same,  
Test Glass, 70 grm.,  
4 Test-tubes, 130x15 mm.,

Test-tube Holder No. 4100,  
Test-tube Brush, sponge end,  
Test-tube Rack No. 8920,  
¼ kilo Glass-tubing,  
Deflagrating Spoon No. 8581,  
2 Wax Tapers,  
3 Sheets Filtering-paper,

1 Sheet each Litmus Paper, red and blue,  
Apparatus for generating gas, with cork stopper, funnel-tube and delivery tube, No. 1840, 250 cc.,  
Sand Bath of tinned iron, 127 mm.  
Iron 2-ring Stand.

**Chemicals.**

Ammonia,  
Argentite Nitrate, 3 grm.,  
Camphor,  
Castor Oil,  
Canada Balsam,  
Chlorinated Lime,  
Hydrochloric Acid,  
Lime,  
Nitric Acid,  
Phosphorus,  
Phosphorus, red,  
Phosphorized Oil,  
Potassium Carbonate,  
Potassium Sulphocyanide,  
Solution of Indigo,  
Sulphuric Ether,  
Sulphuric Acid,  
Tincture of Iron,  
Tincture of Litmus,  
Tincture of Nutgalls,  
Tin Foil,

Turpentine,  
Ammonium Chloride,  
Ammonium Phosphate,  
Barium Nitrate,  
Borax,  
Chalk,  
Charcoal,  
Cotton Wick,  
Copper Sulphate,  
Gum Arabic,  
Iron Filings,  
Iron Sulphate,  
Lead Acetate,  
Lead Bullet,  
Loaf Sugar,  
Logwood,  
Lycopodium,  
Magnesium,  
Manganese Dioxide,  
Marble,  
Mercury Bichloride,

Oxalic Acid,  
Potassium Chlorate,  
Potassium Dichromate,  
Potassium Ferrocyanide,  
Potassium Iodide, 15 grm.,  
Potassium Nitrate,  
Plumbago,  
Resin,  
Sealing Wax,  
Shellac,  
Sponge,  
Starch,  
Sulphur,  
Sulphur, Roll,  
Sodium Bicarbonate,  
Sodium Carbonate,  
Sodium Sulphate,  
Stone Coal,  
Tartaric Acid,  
Zinc, granulated.

10185

**SET OF APPARATUS AND CHEMICALS,****To perform most of the important experiments in School Text Books.****All chemicals in Bottles.**

Packed ready for shipment.....\$17 75

**Apparatus.**

Brass Blow-pipe, with bulb, 20 cm.,  
Brass Deflagrating Spoon,  
Tripod, No. 9455,  
Lead Dish, 7½ cm.,  
Shallow iron Sand Bath, 12½ cm.,  
Test-tube Brush, sponge end,  
Test-tube Holder of wood,  
Triangular File, 7½ cm.,  
1 doz. assort. Corks

1 foot 4.7 mm. Rubber Tubing, No. 9815,  
3 sheets Filtering-paper,  
1 sheet each red and blue Litmus Paper,  
1 Nest Crucibles 35,  
Shallow porcel. Mortar, No. 1,  
Berlin porcel. Evaporating Dish, No. 4972, 200 cc.,  
Test-tube Rack, No. 8920,  
12 Test-tubes, 130x15 mm.,

Flask, 250 cc.,  
Tubulated glass Retort, 60 cc.,  
¼ kilo Glass-tubing,  
Alcohol Lamp, No. 6781, 125 cc.,  
Graduate, 1 oz.,  
Glass Funnel, 8 cm.,  
Apparatus for generating gas, with rubber stopper, funnel-tube and delivery tube, No. 1840, 250 cc.

**Chemicals.**

225 grms. Hydrochloric Acid in gl. st. bot.,  
225 grms. Nitric Acid in gl. st. bot.,  
450 grms. Sulphuric Acid in gl. st. bot.,

115 grms. Ammon. Hydrate, conc., in gl. st. bot.,  
30 cc. Ammon. Sulphide, in gl. st. bot.,  
30 cc. Carbon Disulphide,  
30 cc. Ether,

60 grms. Mercury,  
115 grms. Phosphorus,  
2 grms. Potassium,  
7 grms. Sodium,  
4 grms. Arsenious Acid,  
15 grms. Oxalic Acid,

REMEMBER OUR DISCOUNT.

**10183 SET OF APPARATUS AND CHEMICALS—(Continued.)****Chemicals.**

15 grms. Tartaric Acid,	30 grms. Iron Sulphate,	7 grms. Potassium Ferrocyanide,
30 grms. Ammon. Chloride,	60 grms. Iron Sulphide,	30 grms. Potassium Hydrate,
30 grms. Ammon. Nitrate,	15 grms. Lead Acetate,	30 grms. Potassium Nitrate,
30 grms. Animal Charcoal,	15 grms. Litmus,	4 grms. Silver Nitrate,
15 grms. Antimony,	7 grms. Magnesium Oxide,	15 grms. Sodium Biborate,
30 grms. Barium Chloride,	1 Meter Magnesium Ribbon,	30 grms. Sodium Carbonate,
30 grms. Barium Nitrate,	60 grms. Manganese Peroxide,	30 grms. Sodium Sulphate,
30 grms. Calcium Fluoride,	7 grms. Nutgalls,	15 grms. Strontium Chloride,
30 grms. Calcium Sulphate,	15 grms. Potassium Bichromate,	15 grms. Strontium Nitrate,
30 grms. Copper Sulphate,	60 grms. Potassium Chlorate,	15 grms. Sulphur,
4 grms. Gun Cotton,		115 grms. Zinc, granulated.
4 grms. Iodine,		

**10186 SET OF APPARATUS AND CHEMICALS,**  
**according to "Elements of Chemistry by Prof. Rufus P. Williams." \$108.50**  
**Individual Apparatus.**

4 Reagent Bottles No. 3335, 250 cc.: NH <sub>4</sub> OH, HCl, HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , ....	\$1 40	1 camel hair Brush No. 3600, extra large	\$0 15
1 Pneumatic Trough No. 9510, 13x19x25 cm.	1 85	1 Magnet No. 6940, 8 cm.	15
1 Battersea Crucible No. 4574, 10 grms.	07	4 wide mouth Bottles No. 3250, 125, 250, 350, 500 cc.	40
2 Beakers No. 2940, 90 and 140 cc.	30	1 Rubber Stopper with 2 holes for 250 cc. bottle	31
2 pieces brass Wire Gauze No. 30, 10 cm. square	20	4 pieces Window Glass	35
10 cm. Platinum Wire No. 29	33	1 Funnel, 5 cm.	13
1 Blow-pipe No. 3090, 20 cm.	13	1 Porcelain Evaporating Dish No. 4972, 120 cc.	25
6 pieces Glass-tubing	10	1 piece Asbestos Board No. 2464, 10 cm. square	05
4 pieces Combustion Tubing	18	1 Sandbath No. 8240, 10 cm.	11
1 Test-tube Brush No. 3615	06	1 pr. steel Forceps No. 5400, 9 cm.	18
1 Tube Brush No. 3625, 25 cm.	20	1 triangular File, 7½ cm.	15
12 Test-tubes, 130x15 cm.	38	1 piece Copper Wire	10
4 Cork Stoppers for Tubes	10	1 piece Lead Wire	15
1 Wing-top for Bunsen Burner	25	1 piece Zinc Wire	20
1 Blow-pipe Tube for Bunsen Burner No. 3895	25	1 wooden Test-tube Holder	13
Sheet Copper, 10 cm. square	10	1 Test-tube Rack No. 8920	35
1 Retort No. 8050, 125 cc.	19	1 Thistle Tube, 25 cm.	10
1 Tumbler	15	1 Bohemian Flask, 250 cc.	22
1 piece Cobalt Glass, 7 5 cm. square	10	1 Rubber Stopper with 2 holes for 250 cc. Flask	16
1 Horn Spatula, 14 cm.	14	1 Bunsen Burner No. 3740	55
1 sheet Litmus Paper	05	1 2-ring Stand No. 8862	80
2 packs, 100 each Filter Paper No. 5174, 10 cm.	32	2 ft. Rubber Tubing No. 9815, 6 mm.	22
1 bunch Splints	15	1 ft. ditto, 4.7 mm.	08
1 sheet Turmeric Paper	06	1 Rule No. 8200/1	60
6 Ignition Tubes No. 9120/1, 13 cm.	48	1 Graduate No. 5970, 4 oz.	50
1 Glass Cutter No. 5879/5	2 00	1 Lead Dish, 6.3 cm.	20
1 pr. side cutting Pliers No. 7770, 12 cm.	75	1 round File, 7.5 cm.	20
1 Porcelain Mortar and Pestle No. 7250, 8½ cm.	50		\$ 17 58

**Packed ready for shipment \$18.65**

**CHEMICALS,**

**sufficient to perform the more important experiments for a class of 20 students.**

**All chemicals put up in bottles.**

5 lbs. Acetic Acid No. 8,	14 lbs. Nitric Acid 36° Bé,	1 qt. Alcohol,
¼ lb. Boracic Acid, refined, cryst.,	¼ lb. Oxalic Acid,	1 lb. Alum, cryst.,
24 lbs. Hydrochloric Acid, 18° Bé,	¼ lb. Phosphoric Acid, syrupy,	1 lb. Aluminium Chloride,
¼ lb. Hydrofluoric Acid, com'l., in ceresine bottle.	18 lbs. Sulphuric Acid, 66° Bé,	1 lb. Ammonium Carbonate, purif.,
	¼ lb. Tartaric Acid,	2 lbs. Ammonium Chloride, granul.,

**10186 SET OF APPARATUS AND CHEMICALS—(Continued.)**

20 lbs. Ammonium Hydrate, conc., ch. p.,	5 lbs. Iron Sulphide, fused, pure,	1 lb. Potassium Hydrate in sticks,
1 lb. Ammonium Nitrate, granul.,	$\frac{1}{2}$ lb. Iron Pyrite,	1 lb. Potassium Nitrate, cryst.,
$\frac{1}{4}$ lb. Ammonium Oxalate, pure,	1 lb. Iron Sulphate, cryst., pure,	$\frac{1}{2}$ lb. Potassium Nitrite,
$\frac{1}{4}$ lb. Ammonium Sulphate,	1 lb. Sheet Lead,	$\frac{1}{4}$ lb. Potassium Permanganate, cryst., pure,
$\frac{1}{4}$ lb. Metallic Antimony,	12 ft. Lead Wire,	$\frac{1}{4}$ lb. Potassium Sulphocyanide,
$\frac{1}{4}$ lb. Antimony Chloride, cryst.,	$\frac{1}{2}$ lb. Lead Acetate,	$\frac{1}{2}$ lb. Potassium Tartrate, pure,
1 oz. Arsenious Acid,	$\frac{1}{2}$ lb. Lead Chloride,	$\frac{1}{2}$ lb. powd. Silica,
$\frac{1}{4}$ lb. Hydrofluosilicic Acid,	2 lbs. Lead Nitrate, ch. p.,	4 oz. Silver Nitrate, cryst.,
$\frac{1}{4}$ lb. Arsenopyrite,	$\frac{1}{4}$ lb. Lead Oxide (Litharge),	$\frac{1}{4}$ oz. Metallic Sodium,
$\frac{1}{4}$ lb. Barium Chloride,	$\frac{1}{4}$ lb. Lead Sesquioxide (Red Lead),	$\frac{1}{2}$ lb. Sodium Acetate,
$\frac{1}{4}$ lb. Barium Hydrate, cryst., ch. p.,	1 oz. Litmus,	$\frac{1}{2}$ lb. Sodium Arsenite, com'l.,
$\frac{1}{4}$ lb. Bismuth Oxychloride,	$\frac{1}{2}$ qr. Litmus Paper,	$\frac{1}{2}$ lb. Sodium Bicarbonate,
$\frac{1}{4}$ lb. Calcium Chloride, granul., pure,	3 lbs. Marble Chips,	$\frac{1}{4}$ lb. Sodium Bisulphate, cryst., c. p.,
$\frac{1}{2}$ lb. Calcium Fluoride, powd.,	$\frac{1}{2}$ oz. Magnesium Ribbon,	$\frac{1}{2}$ lb. Sodium Baborate,
$\frac{1}{2}$ lb. Calcium Hypochlorite,	$\frac{1}{2}$ lb. Magnesium Chloride, cryst., c. p.,	3 lbs. Sodium Carbonate,
$\frac{1}{2}$ lb. Calcium Sulphate (Plaster Paris),	$\frac{1}{2}$ lb. Magnesium Sulphate, cryst.,	4 lbs. Sodium Chloride,
2 lbs. Calcium Oxide (unslaked lime),	$\frac{1}{2}$ lb. Manganese Chloride, cryst., pure,	3 lbs. Sodium Hydrate in sticks, in 3 bottles,
$\frac{1}{4}$ lb. Carbon Bisulphide,	$\frac{1}{2}$ lb. Manganese Dioxide, granul.,	2 lbs. Sodium Nitrate, cryst., purif.,
1 lb. Animal Charcoal, powd.,	1 $\frac{1}{2}$ lbs. Manganese Dioxide, powd.,	$\frac{1}{2}$ lb. Sodium Nitrite,
1 lb. Animal Charcoal, granul.,	$\frac{1}{2}$ lb. Mercury,	$\frac{1}{2}$ lb. Sodium Oxalate,
1 lb. Wood Charcoal, powd.,	$\frac{1}{2}$ lb. Mercury Bichloride,	1 lb. Sodium Phosphate, cryst.,
1 lb. Wood Charcoal, lump,	$\frac{1}{2}$ lb. Mercury Protochloride,	1 lb. Sodium Sulphate, cryst.,
$\frac{1}{4}$ lb. Cobalt Chloride, pure,	$\frac{1}{4}$ lb. Mercury Pernitrate,	$\frac{1}{2}$ lb. Sodium Sulphide, cryst.,
$\frac{1}{4}$ lb. Cobalt Nitrate, pure,	1 lb. Mercury Oxide, red,	$\frac{1}{2}$ lb. Sodium Sulphite, cryst.,
$\frac{1}{4}$ lb. Cochineal,	$\frac{1}{2}$ lb. Nessler's Solution,	1 lb. Sodium Thiosulphate,
3 lbs. Copper Turnings,	2 oz. Phosphorus,	$\frac{1}{2}$ lb. Starch,
$\frac{1}{4}$ lb. Sheet Copper, pure,	1 Roll Picture Wire,	$\frac{1}{4}$ lb. Strontium Chloride, cryst.,
1 lb. Copper Chloride,	$\frac{1}{2}$ oz. Potassium,	1 lb. Sugar,
$\frac{1}{4}$ lb. Copper Nitrate, cryst., pure,	$\frac{1}{2}$ lb. Potassium Bromide,	2 lbs. Roll Sulphur,
1 lb. Copper Oxide, powd.,	1 $\frac{1}{2}$ lbs. Potassium Carbonate,	1 lb. Flour Sulphur,
$\frac{1}{2}$ lb. Copper Sulphate,	$\frac{1}{4}$ lb. Potassium Chloride, pure,	$\frac{1}{2}$ lb. Tin Bichloride,
$\frac{1}{2}$ lb. Ether, U. S. P. 1880,	2 lbs. Potassium Chlorate, cryst.,	1 sheet Turmeric Paper,
1 book Gold Leaf,	$\frac{1}{2}$ lb. Potassium Chromate,	1 oz. Oil of Turpentine,
$\frac{1}{4}$ lb. Indigo,	$\frac{1}{2}$ lb. Potassium Cyanide,	3 lbs. granul. Zinc,
2 oz. Iodine, resublimed,	1 lb. Potassium Dichromate,	12 ft. Zinc Wire,
1 lb. Iron Filings,	1 lb. Potassium Ferrocyanide,	1 lb. Zinc in sticks, free from As.
$\frac{1}{2}$ lb. Iron by Hydrogen, gray, 60-70%,	$\frac{1}{4}$ lb. Potassium Ferricyanide,	$\frac{1}{2}$ lb. Zinc Chloride,
1 lb. Iron Sesquichloride, dry, chem. p.,	1 lb. Potassium Iodide,	$\frac{1}{2}$ lb. Zinc Nitrate, c. p.,

All chemicals enumerated above, packed ready for shipment.....\$90 00

**10190 SET OF APPARATUS FOR VOLUMETRIC ANALYSIS.....\$46 75**

Packed ready for shipment.....\$ 48 00

- Gay Lussac's Burette, on polished wooden foot, 50 cc. in  $\frac{1}{8}$ ,  
 Bink's Burette, on polished wooden foot, 50 cc. in  $\frac{1}{8}$ ,  
 Mohr's Burette, with spring clamp, rubber tubing and jet, 100 cc. in  $\frac{1}{8}$ ,  
 Mohr's Burette, with spring clamp, rubber tubing and jet, 50 cc. in  $\frac{1}{8}$ ,  
 Mohr's Burette, with spring clamp, rubber tubing and jet, 25 cc. in  $\frac{1}{8}$ ,  
 Mohr's Burette, with Geissler's stop-cock, 50 cc. in  $\frac{1}{8}$ , No. 3685,  
 4 Burette Floats,  
 2 Pipettes, with bulb, capacity about 25 and 50 cc.,  
 4 Volume Pipettes, 15, 25, 50 and 100 cc.,



**10190 SET OF APPARATUS FOR VOLUMETRIC ANALYSIS—(Continued.)**

- 4 graduat. Mohr's Pipettes, 5, 20, 50 and 100 cc.,  
divided in  $\frac{1}{10}$   $\frac{1}{10}$   $\frac{1}{10}$   $\frac{1}{10}$   
3 Liter Bottles, with mark around the neck, 100, 250 and 500 cc.,  
1 Liter Bottle, with glass stopper, 1000 cc.,  
4 graduated Cylinders with lip, 100, 250, 500 and 1000 cc.,  
1 graduated Cylinder with glass stopper, 1000 cc.,  
1 graduated Mixing Bottle, glass stopper. 1000 cc.,  
1 Nest of 6 Griffin's Beakers, Nos. 1 to 6,  
1 Nest of 5 plain Beakers, Nos. 1 to 5,  
1 glass Alcohol Lamp No. 6775, 125 cc.,  
6 Test Glasses with lip, 70, 100 and 200 grms.,  
6 German glass Funnels, 4, 5, 7, 8, 9 and 10 cm.,  
 $\frac{1}{4}$  kilo German Glass Tubing,  
1 doz. Stirring Rods, assort.,  
20 sheets blue and red Litmus Paper,  
10 sheets Turmeric Paper,  
 $\frac{1}{2}$  quire Swedish Filtering-Paper, No. 1F.,  
2 black walnut Supports, with movable arm and cork-lined jaws, for 2 bu-  
rettes each.

**10195 SET OF APPARATUS AND CHEMICALS**

For performing most of the experiments mentioned in Stoeckhardt's  
Chemistry.

All chemicals are put up in bottles.....\$ 21 90

Packed ready for shipment..... 23 00

**Apparatus.**

- |   |   |  |
|---|---|--|
| Alcohol Lamp No. 6770,<br>125 cc.,                            | Receiver, 125 cc., plain,                             | 2 porcelain Dishes, 9 $\frac{1}{2}$ and<br>11 $\frac{1}{4}$ cm. diameter,  |
| 2 Beakers, 140 and 225 cc.,                                   | Iron Tripod, 15 cm.,                                  | 2 Meissen porcelain Cruci-<br>bles with covers, Nos. 6<br>and 7,           |
| 2 Flasks, 125 and 250 cc.,                                    | Iron 2-ring Stand,                                    | Porcelain Mortar No. 1,<br>shallow,  |
| 100 grms. assort. Glass Tub-<br>ing,                          | Shallow iron Sand Bath,<br>10 cm.,                    | 1 piece Platinum Foil, 1 $\frac{1}{2}$ x<br>3 $\frac{1}{4}$ cm., 1/27 mm., |
| 2 Stirring Rods, 20 cm.,                                      | 1 pr. japanned iron Crucible<br>Tongs,                | 1 piece Platinum Wire,<br>5 cm., No. 26,                                   |
| 2 Glass Funnels, 5 and 8 cm.,                                 | Cork File, round, 7 $\frac{1}{2}$ cm.,                | 1 plain brass Blow-pipe, 20<br>cm.,  |
| Safety Tube with 1 bulb,                                      | Triangul. File, 7 $\frac{1}{2}$ cm.,                  | 1 strip each Copper and Zinc<br>Foil,                                      |
| Funnel Tube, 30 cm.,  | 1 pr. steel Forceps No. 5400,<br>9 cm.,               | 1 piece brass Wire Gauze,<br>15x15 cm., No. 30.                            |
| Chloride of Calcium Tube<br>with 1 bulb, No. 9565,<br>15 cm., | Test-tube Rack No. 8920,<br>with 6 tubes,             |  |
| 2 Arsenic Tubes,  | 2 perforat. Rubber Stoppers<br>No. 8700, No. 6 and 7, |  |
| 1 doz. 60 cc. wide-mouth<br>Bottles and Corks,                | 6 sheets Filtering Paper,                             |  |
| Retort, 125 cc., plain,                                       | 1 sheet each red and blue<br>Litmus Paper,            |  |
| Retort, 125 cc., tubulated,                                   |   |  |
| Receiver, 125 cc., tubulated,                                 |   |  |

**Chemicals.**

- |  |                                     |                                       |
|--|-------------------------------------|---------------------------------------|
| 450 grms. Hydrochloric<br>Acid, in gl. st. bot.,     | 1 book Dutch Metal,                 | 30 grms. Potassium Cyanide,           |
| 450 grms. Nitric Acid, in gl.<br>st. bot.,           | 30 cc. Ether,                       | 15 grms. Potassium Ferricy-<br>anide, |
| 1.35 kilos Sulphuric Acid in<br>gl. st. bot.,        | 7 grms. Iodine,                     | 30 grms. Potassium Ferro-<br>cyanide, |
| 115 grms. Ammon. Hydrate,<br>conc., in gl. st. bot., | 30 grms. Iron Filings,              | 60 grms. Potassium Hydrate,           |
| 15 grms. Ammon. Chloride,                            | 15 grms. Lead Acetate,              | 15 grms. Potassium Iodide,            |
| 15 grms. Ammon. Nitrate,                             | 60 grms. Manganese Per-<br>oxide,   | 30 grms. Phosphorus,                  |
| 15 grms. Arsenious Acid,                             | 30 grms. Mercury Binoxide,          | 15 grms. Strontium Chlo-<br>ride,     |
| 30 grms. Barium Chloride,                            | 30 grms. Metallic Antimony,         | 4 grms. Sodium,                       |
| 30 grms. Bismuth,                                    | 30 grms. Nickel,                    | 60 grms. Sulphur,                     |
| 15 grms. Cadmium,                                    | 30 grms. Oxalic Acid,               | 30 grms. Tin Foil,                    |
| 60 grms. Calcium Fluoride,                           | 2 grms. Potassium,                  | 30 grms. Zinc, granulated.            |
| 30 grms. Copper Sulphate,                            | 60 grms. Potassium Bichro-<br>mate, |                                       |
|  | 450 grms. Potassium Chlo-<br>rate,  |                                       |

## 10201

## SET OF APPARATUS AND CHEMICALS

To perform the experiments in "The Young Chemist," by Prof.

John H. Appleton.

All chemicals are put up in bottles.....\$ 25 00  
 Packed ready for shipment.....26 25

## Apparatus.

Alcohol Lamp, 60 cc., No. 6781,	Test-tube of hard glass, No. 9120/1, 20 cm.,	7.5 cm. Platinum Wire No. 29,
1 hectoGerman Glass Tubing,	Test-tube Rack No. 8920,	90 cm. Rubber Tubing,
Funnel, 5 cm.,	Plain brass Blow-pipe, 20 cm.,	6 mm.
Flask, 250 cc.,	Lead Dish, 5 cm.,	Taper,
Flask, with side neck, 60 cc.,	Small Bar of Lead,	3 Blocks of Wood, 7.5x7.5x 2.5 cm.,
Nest of 3 Beakers, Nos. 1 to 3,	Horseshoe Magnet, 7.5 cm.,	Cork fitted with glass jet,
Lamp Chimney,	1 pr. steel Forceps, 12 cm.,	1 doz. assort. Corks,
Wide-mouth Bottle, 1 liter,	Tripod No. 9450,	Casserole No. 4010, 150 cc.,
Tubulated Retort, 60 cc.,	Bunsen Burner with regula- tor,	Porcel. Crucible No. 4665, No. 6,
Watch Glass, 5 cm.,	Blow-pipe Tube,	100 cut white Filters, 10 cm.,
6 Test-tubes, 7.5 cm.,	Iron 2-ring Stand,	1 sheet each blue and red Litmus Paper.
12 Test-tubes, 130x15 mm.,	Piece Platinum Foil, 2.5x.2.5 cm., 0.037 mm.,	
2 Test-tubes, 200x25 mm.,		
1 each Test-tube with side neck, 13 and 20 cm.,		

## Chemicals.

120 cc. Acetic Acid,	115 grms. Calcium Fluoride,	30 grms. Nickel and Am- monium Sulphate,
120 cc. Hydrochloric Acid in gl. st. bot.,	115 grms. Calcium Oxide,	60 grms. Oxalic Acid,
120 cc. Nitric Acid in gl. st. bot.,	115 grms. Calcium Sul- phate,	60 grms. Paraffine,
120 cc. Sulphuric Acid in gl. st. bot.,	60 grms. Charcoal,	60 grms. Potassium Bichro- mate,
120 cc. Alcohol, Ethylic,	115 grms. Chlorinated Lime,	30 grms. Potassium Bromide,
120 cc. Ammon. Hydrate, in gl. st. bot.,	5 grms. Cobalt Nitrate,	115 grms. Potassium Carbon- ate,
30 cc. Carbon Bisulphide,	30 grms. Copper Pyrites,	60 grms. Potassium Chlorate,
60 grms. Mercury,	60 grms. Copper Sulphate,	30 grms. Potassium Ferricy- anide,
30 grms. Phosphorus,	5 grms. Copper Wire,	30 grms. Potassium Ferro- cyanide,
2 grms. Potassium,	2 sheets Gold Leaf,	15 grms. Potassium Iodide,
30 grms. Sodium Silicate,	5 grms. Indigo,	115 grms. Potassium Nitrate,
60 cc. Solution of Hydro- gen Sulphide,	5 grms. Iodine,	60 grms. Potassium Perman- ganate,
5 grms. Sodium,	30 grms. Iron Pyrites,	15 grms. Potassium Sulpho- cyanide,
60 cc. Turpentine,	115 grms. Iron Sulphate,	Quill,
4 grms. Aluminium,	115 grms. Iron Sulphide,	115 grms. Sand,
115 grms. Alum,	30 grms. Iron Turnings,	30 grms. Shellac,
60 grms. Ammonium Car- bonate,	30 grms. Iron Wire,	4 grms. Silver Nitrate,
115 grms. Ammonium Chloride,	30 grms. Lead Acetate,	30 grms. Sodium Chloride,
60 grms. Animal Charcoal,	30 grms. Lead Nitrate,	30 grms. Sodium Hydrate,
30 grms. Antimony,	30 grms. Lead sheet,	30 grms. Starch,
30 grms. Arsenious Oxide,	5 grms. Lithium Carbon- ate,	60 grms. Strontium Nitrate,
30 grms. Barium Chloride,	30 grms. Litmus,	115 grms. Sulphur,
30 grms. Barium Nitrate,	60 cm. Magnesium Ribbon,	5 grms. Tartar Emetic,
60 grms. Beeswax,	115 grms. Magnesium Sul- phate,	30 grms. Tin Chloride,
5 grms. Bismuth,	115 grms. Manganese Per- oxide,	30 grms. Tin Foil,
5 grms. Bismuth Nitrate,	30 grms. Manganese Sul- phate,	30 grms. Zinc, granulated,
60 grms. Borax,	5 grms. Mercury Bichlor- ide,	115 grms. Zinc Sulphate.
115 grms. Calcium Car- bonate (precip. chalk),	5 grms. Mercury Binoxide,	
	5 grms. Nickel,	

## 10206

## SET OF APPARATUS AND CHEMICALS

to perform the experiments in the "New Edition of Steele's Fourteen Weeks in Chemistry."

All Chemicals are put up in bottles.....\$ 31 25  
 Packed ready for shipment.....32 50

REMEMBER OUR DISCOUNT.

**10206 SET OF APPARATUS AND CHEMICALS—(Continued.)****Apparatus.**

1 set Gramme Weights, No. 10063.....	\$0 70
English Hand Scale, 13 cm. beam, with brass pans and weights.....	75

Apparatus for generating gas with rubber stopper, funnel tube and delivery tube, No. 1840, 500 cc.

Glass Funnel, 10 cm.,	Triangular File, $7\frac{1}{4}$ cm.,	Nest Hessian Crucibles, small 55,
3 Flasks, 250, 500 and 750 cc.,	Round File, $7\frac{1}{4}$ cm.,	Porcelain Mortar, No. 1, shallow,
Graduate, 2 oz.,	Lead Dish, $7\frac{1}{2}$ cm.,	$\frac{1}{4}$ quire German Filtering-paper, No. 5175/1,
Graduate, 60 grms.,	Pneumatic Trough,	Rubber Gas Bag, 4 lit., with brass socket and stop-cock,
$\frac{1}{4}$ kilo Glass-tubing,	No. 9510, 13x23x30 cm.,	60 cm. Rubber Tubing,
Tubulated Retort, 250 cc.,	Iron 3-ring Stand,	No. 9815, 4.7 mm.,
Alcohol Lamp, No. 6770,	Brass Wire Gauze, 15x15 cm.,	30 cm. Rubber Tubing,
125 cc.,	Set of Cork Borers, No. 1 to 3,	No. 9815, 6 mm.,
6 Test-tubes, 160x16/17 mm.,	13 cm. Platinum Wire,	2 doz. assorted Corks.
Test-tube Rack, No. 8920,	No. 26,	
Small straight Pipette, 21 cm.,	2 Berlin porcel. Evaporating Dishes, No. 4972, 150 and 270 cc.	
Brass Blow-pipe, with bulb, 20 cm.,		
Brass Deflagrating Spoon,		

**Chemicals.**

7 grms. Arsenious Acid,	15 grms. Calcium Sulphate,	$\frac{1}{2}$ gm. Platinum, spongy,
115 grms. Hydrochloric Acid, in gl. st. bot.,	7 grms. Camphor,	2 grms. Potassium,
115 grms. Nitric Acid, in gl. st. bot.,	15 grms. Carbon Bisulphide,	15 grms. Potassium Bichromate,
450 grms. Sulphuric Acid, in gl. st. bot.,	30 grms. Chlorinated Lime,	30 grms. Potassium Chlorate,
4 grms. Oxalic Acid,	15 grms. Cobalt Nitrate Solution,	7 grms. Potassium Cyanide,
7 grms. Tartaric Acid,	15 grms. Copper Sulphate,	2 grms. Potassium Ferricyanide,
30 grms. Ammonium Chloride,	30 grms. Copper Wire,	4 grms. Potassium Ferrocyanide,
115 grms. Ammonium Hydrate, in gl. st. bot.,	15 cc. Ether,	15 grms. Potassium Hydrate,
60 grms. Ammonium Nitrate,	3 sheets Gold Leaf,	4 grms. Potassium Iodide,
15 grms. Ammonium Sulphide, in bot. with rubber stopper,	4 grms. Gun Cotton,	15 grms. Potassium Nitrate,
15 grms. Alum,	2 grms. Iodine,	4 grms. Potassium Permanganate,
2 grms. Aniline,	2 grms. Indigo,	2 grms. Silver Nitrate,
15 grms. Antimony,	15 grms. Iron Sulphate,	4 grms. Sodium,
2 grms. Antimony and Potassium Tartrate,	60 grms. Iron Sulphide,	7 grms. Sodium Borate,
2 grms. Barium Chloride,	7 grms. Lead Acetate,	15 grms. Sodium Carbonate,
2 grms. Barium Nitrate,	15 grms. Lead Monoxide,	60 grms. Sodium Sulphate,
30 grms. Animal Charcoal,	15 grms. Litmus,	4 grms. Strontium Chloride,
15 grms. Calcium Fluoride,	1 Meter Magnesium Ribbon,	4 grms. Strontium Nitrate,
	115 grms. Manganese Peroxide,	60 grms. Sulphur,
	15 grms. Mercury Bichloride,	15 grms. Oil of Turpentine,
	2 grms. Mercury Cyanide,	500 cc. Distilled Water,
	7 grms. Mercury Bin oxide,	2 grms. Zinc Chloride.
	7 grms. Nutgalls,	
	7 grms. Phosphorus,	

**10210 SET OF CHEMICAL APPARATUS FOR QUALITATIVE ANALYSIS,**

**ACCORDING TO FRESenius.....\$ 46 00**

**Packed ready for shipment..... 47 25**

- |  |  |
|--|--|
| 1. Rose's Lamp, with mahogany base.                          | 9. Brass Wire Gauze, 15x15 cm.                               |
| 2. Glass Alcohol Lamp, No. 6770, 125 cc.                     | 10. Shallow Iron Sand Bath, 15 cm.                           |
| 3. Nickel-plated Plattner's Blow-pipe with platinum jet.     | 11. Iron 3-ring Stand.                                       |
| 4. Platinum Crucible with cover, 10 cc.                      | 12. Wooden Filtering Stand, 1 arm for 2 funnels, No. 8855.   |
| 5. 1 pr. Forceps, platinum pointed, No. 5430.                | 13. Agate Mortar, 65 mm.                                     |
| 6. 2 clay covered Wire Triangles.                            | 14. 3 Royal Berlin Crucibles, Nos. 0, 1 and 2.               |
| 7. Iron Tripod, 20 cm., with 2 rings.                        | 15. Nest of 5 hemispherical Berlin porcel. Dishes, No. 4970. |
| 8. 1 pr. Crucible Tongs, of polished steel, No. 9325, 20 cm. | 16. 3 Bohemian Funnels, No. 5480, 4, 6 and 7 cm.             |

**10210 SET OF CHEMICAL APPARATUS FOR QUALITATIVE ANALYSIS**

(Continued.)

- |   |  |
|---|--|
| 17. $\frac{1}{2}$ kilo German Glass-tubing.<br>18. Nest of 5 Beakers, No. 2940, No. 1 to 5.<br>19. 4 Bohemian Flasks, 60, 125, 250 and 500 cc.<br>20. Washing Bottle with rubber stopper, No. 3471, 500 cc. | 21. 3 Convex Covers for Beakers, 63, 76 and 101 mm.<br>22. $\frac{1}{2}$ doz. Stirring Rods, 20 cm.<br>23. Test-tube Stand, No. 8925, with 12 tubes, 160x16/17 mm.<br>24. Platinum Foil, $2\frac{1}{2}$ x5 cm., $\frac{1}{16}$ mm.<br>25. 15 cm. Platinum Wire No. 26. |
|---|--|

**10214****SET OF APPARATUS,**

**For the performance of the experiments described in SHEPARD'S  
"Inorganic Chemistry."**

- |  |  |
|--|--|
| <b>REMEMBER OUR DISCOUNT.</b><br>12 Test Tubes, 100x12 $\frac{1}{2}$ mm.<br>2 Test Tubes, 200x24/25 mm.<br>2 hard glass Tubes, 20x6 mm.<br>1 hard glass Test Tube, No. 9120, 16 cm.<br>1 Test Tube Rack, No. 8920.<br>1 Test Tube Brush, No. 3615.<br>2 Glass Stirring Rods, 20 cm.<br>2 $\frac{1}{2}$ x2 $\frac{1}{2}$ cm. Platinum Foil, $\frac{1}{16}$ mm.<br>1-7 cm. Platinum Wire, No. 29, with glass handle.<br>1 Black's Blow-pipe.<br>1 pair Steel Tongs, No. 9325.<br>3 Funnels, 5, 8 and 10 cm.<br>200 Filters, 10 and 15 cm., No. 5174.<br>2 Generating Flasks, 60 and 125 cc.<br>2 plain Beakers, 50 and 140 cc.<br>2 Evaporating Dishes, No. 4972, 75 and 120 cc.<br>1 Bunsen Burner.<br>2 feet Rubber Tubing for same, No. 9827.<br>1 350 cc. Wash Bottle, No. 3471/1.<br>1 2 ring Stand.<br>1 Cobalt Glass, 5x5 cm.<br>1 Sand Bath, shallow, 12 $\frac{1}{2}$ cm.<br>1 Wire Gauze, 10x10 cm., or Asbestos Paper.<br>2 sheets Litmus Paper, blue and red.<br>2 Hydrometers, 0.7 to 1.0 and 1.0 to 2.0<br>1 Chemical Thermometer, 360°C, No. 9224.<br>3 Liter Flasks, stoppered, 1- $\frac{1}{4}$ -1 Liter. | 1 500 cc. stoppered Cylinder, double graduated.<br>2 Mohr's Burettes, 50 cc. in $\Lambda$ , with spring clamp, complete.<br>1 graduated Pipette, 5 cc. in $\Lambda$ .<br>1 100 cc. lipped Cylinder.<br>1 set plain Beakers, Nos. 1 to 8.<br>2 Funnels, 13 and 16 cm.<br>2 Berlin Evaporating Dishes, No. 4965, 470 and 1000 cc.<br>1 3-ring Stand.<br>2 stoppered Retorts, 500 cc.<br>2 stoppered Receivers, 500 cc.<br>1 Mohr's Condenser, 31 cm.<br>1 Porcelain Mortar, shallow, 10 cm.<br>$\frac{1}{2}$ kilo assorted Glass Tubing.<br>1 Blast Lamp for Alcohol, No. 6815, medium.<br>1 dozen Corks and 150 grms. Rubber Stoppers, No. 8700.<br>2 Gas Bags, 4 and 8 lit., with sockets and stop-cocks.<br>1 nest Hessian Crucibles, small 5s.<br>90 cm. Rubber Tubing for connections, No. 9815, 4 $\frac{1}{2}$ mm.<br>1 Mercury Trough, porcelain, No. 9490-No. 1.<br>2 Funnel Tubes, No. 5540, 25 cm.<br>1 Bell-jar, tall, 4 lit., No. 2995. |
|--|--|

**The Apparatus enumerated above ..... \$45 10**

**Ditto, packed ready for shipment ..... 46 35**

**Chemicals for Set No. 10214.**

- |  |  |
|--|--|
| 900 grm. Sulphuric Acid, c. p.<br>900 grm. Nitric Acid, c. p.<br>900 grm. Hydrochloric Acid, c. p.<br>450 grm. Acetic Acid, c. p.<br>900 grm. Ammonia, 26° conc., c. p.<br>125 cc. Ammon. Carbon, c. p., sol.<br>125 cc. Ammonium Sulphide.<br>125 cc. Ammonium Chloride, c. p., sol.<br>125 cc. Ammonium Oxalate, c. p., sol.<br>125 cc. Magnesium Sulphate, c. p., sol.<br>60 cc. Silver Nitrate, sol., 5 per cent.<br>125 cc. Ferric Chloride, sol. | 125 cc. Pot. Hydroxide, pure, sol.<br>125 cc. Sod. Hydroxide, pure, sol.<br>125 cc. Pot. Carbonate, c. p., sol.<br>125 cc. Pot. Iodide, pure sol.<br>125 cc. Pot. Bichromate, c. p., sol.<br>125 cc. Pot. Sulphocyanide, c. p., sol.<br>125 cc. Pot. Ferrocyanide, c. p., sol.<br>125 cc. Sod. Phosphate, c. p., sol.<br>125 cc. Barium Chloride, c. p., sol.<br>125 cc. Mercuric Chloride, c. p., sol.<br>125 cc. Lead Acetate, c. p., sol.<br>60 cc. Cobalt Nitrate, c. p., sol. |
|--|--|

**The whole set, in glass stoppered Reagent Bottles, with names and formulas blown in.**

Reagents.....	\$6 85 }	Total .....	\$16 00
Bottles.....	9 15 }		

**Ditto, packed ready for shipment ..... 16 30**

## 10214

**SET OF APPARATUS—(Continued.)****Dry Reagents for Set No. 10214.**

450 grms. Ferrous Sulphate, c. p.	115 grms. Potass. Chlorate, c. p.
115 grms. Sod. Carbonate, dry, c. p.	225 grms. gran. Zinc, free from As.
115 grms. Sod. Biborate, c. p.	125 grms. Sodium and Ammonium Phosphate, c. p.
450 grms. Ferrous Sulphide.	
The whole set put in bottles with cork stoppers.....	

**\$3 00****Reagents for the Side Table for Set No. 10214.**

125 cc. Carbon Disulphide.	125 cc. Sod. Sulphite, c. p., sol.
125 cc. Ether.	125 cc. Calc. Sulphate, c. p., sol.
125 cc. Potass. Sulphate, c. p., sol.	125 cc. Calc. Chloride, c. p., sol.
125 cc. Potass. Ferricyanide, c. p., sol.	125 cc. Stannous Chloride; c. p., sol.
125 cc. Potass. Chromate, c. p. sol.	125 cc. Copper Sulphate, c. p., sol.
125 cc. Potass. Cyanide, pure, sol.	60 cc. Ammon. Molybdate, c. p., sol.
125 cc. Potass. Permangan., c. p., sol.	125 cc. Alcohol, 95 per cent.

This set in glass stoppered Reagent Bottles, with names and formulas blown in.

Reagents.....	\$3 60	Total .....	\$8 60
Bottles.....	5 00		

## 10215

**SET OF APPARATUS AND CHEMICALS**

to perform all the experiments described in Eliot & Storer's  
Elementary Manual of Chemistry.

All chemicals in this set are put up in bottles.....	\$51 75
Packed ready for shipment .....	\$4 25

1 pr. English Hand Scales, 13 cm. beam, with brass pans and weights	\$0 75
1 set Gramme Weights, No. 10063	0 70

Wide Mouth Bottle, 2 lit.,  
Wide Mouth Bottle, 1 lit.,  
Wide Mouth Bottle, 500 cc.,  
2 Wide Mouth Bottles, 250 cc.,  
2 Wide Mouth Bottles, 125 cc.,  
2 Wide Mouth Bottles, 60 cc.,  
Funnel, 5 cm.,  
Funnel, 10 cm.,  
3 Wulf's Bottles with 3 necks, 250 cc.,  
5 Flasks, 60, 125, 250, 500 and 750 cc.,  
Apparatus for generating gas, with rubber stopper, No. 1840, 500 cc.,  
½ kilo assorted Glass-tubing,  
Glass-tube, 25 mm. diameter, 60 cm. long,  
½ doz. Ignition Tubes of hard Bohemian glass, No. 9120/1, 15 cm.,  
Tubulated Retort with ground stopper, 125 cc.,  
Tubulated Receiver with ground stopper, 125 cc.,  
Thistle Tube, 35 cm.,  
Chloride of Calcium Tube with 1 bulb, No. 9565, 15 cm.,  
Test Glass, conical, 70 grms.,  
Pipette with bulb, capacity about 15 cc.,  
Nest of 4 beakers, No. 1 to 4,  
3 Convex Covers, 63, 76 and 89 mm.,  
Graduated Cylinder, No. 4790, 250 cc.,  
Graduated Measure, No. 5975, 30 cc.,  
Alcohol Lamp, 125 cc.,

2 Berlin Evaporating Dishes, 175 and 290 cc.,  
Casserole, 350 cc., with lip and flattened handle,  
Wedgewood Mortar, No. 0, 12 cm.,  
Earthenware Vessel,  
Battersea Crucible, F,  
Iron Mortar, goblet-shape, 250 cc.,  
Bunsen Burner, No. 3740,  
Iron 3 ring Stand,  
Iron Wire-Gauze, 15 cm. square,  
Brass Wire Gauze, 15 cm. square,  
120 cm. heavy iron Wire,  
120 cm. Piano Wire,  
Shallow iron Sand Bath, 15 cm.,  
Bunsen Blast Lamp,  
Double acting Bellows, Fletcher's No. 9,  
Brass Blow-pipe with bulb, 20 cm.,  
Triangular File, 7½ cm.,  
Round File, 7½ cm.,  
1 pr. steel Forceps, 10 cm.,  
Copper Water Bath, 12.7 cm.,  
Platinum Foil, 2½x2½ cm, ⅛ mm.,  
5 cm. Platinum Wire, No. 26,  
Lead Tray, 7½ cm.,  
1 doz. assorted Corks,  
210 cm. 6 mm. White Rubber Tubing, No. 9815,  
90 cm. 4.7 mm. White Rubber Tubing, No. 9815,  
Wooden Test-tube Holder,  
6 sheets German Filtering-paper,  
Cylindrical Thermometer with paper scale, 15 cm.,

**10215 SET OF APPARATUS AND CHEMICALS—(Continued.)****Chemicals.**

30 grms. Alum,	3 sheets Gold Leaf,	7 grms. Potassium Bromide,
30 grms. Ammonium Chloride,	7 grms. Gum Arabic,	4 grms. Potassium Cyanide,
115 grms. Ammonium Hydrate, in gl. st. bot.,	115 grms. Hydrochloric Acid, in gl. st. bot.,	4 grms. Potassium Ferricyanide,
30 grms. Ammonium Nitrate,	4 grms. Indigo,	4 grms. Potassium Ferrocyanide,
7 grms. Aniline,	4 grms. Iodine,	4 grms. Potassium Iodide,
2 grms. red Aniline,	30 grms. Iron Filings,	7 grms. Potassium Hydrate,
30 grms. Animal Charcoal,	15 grms. Iron Sulphate,	15 grms. Potassium Nitrate,
15 grms. Antimony,	60 grms. Iron Sulphide,	4 grms. Potassium Permanganate,
4 grms. Arsenious Acid,	7 grms. Lead Acetate,	4 grms. Potassium Tartrate,
7 grms. Barium Chloride,	15 grms. Lead Monoxide,	15 grms. Resin,
7 grms. Barium Nitrate,	7 grms. Litmus,	7 grms. Shellac,
15 grms. Benzole,	15 grms. Logwood,	7 grms. Sodium,
30 grms. Bromine,	1 Meter Magnesium Ribbon,	7 grms. Sodium Acetate,
15 grms. Calcium Chloride,	115 grms. Manganese Peroxide,	7 grms. Sodium Borate,
30 grms. Calcium Fluoride,	4 grms. Mercury Bichloride,	15 grms. Sodium Carbonate,
30 grms. Calcium Sulphate,	4 grms. Mercury Bin oxide,	4 grms. Sodium Hydrate,
7 grms. Camphor,	225 grms. Nitric Acid, in gl. st. bot.,	7 grms. Sodium Nitrate,
7 grms. Carbolic Acid,	7 grms. Nutgalls,	7 grms. Sodium Silicate,
30 grms. Carbon Bisulphide,	7 grms. Oxalic Acid,	7 grms. Sodium Sulphate,
15 grms. Castor Oil,	4 grms. Phosphorus,	7 grms. Strontium Nitrate,
30 grms. Chalk,	4 grms. Phosphorus, red,	15 grms. Sulphur,
30 grms. Chlorinated Lime,	2 grms. Picric Acid,	450 grms. Sulphuric Acid, in gl. st. bot.,
4 grms. Cochineal,	$\frac{1}{4}$ gm. Platinum Scrap	4 grms. Tin Bin oxide,
15 grms. Copper Filings,	2 grms. Potassium,	30 grms. Oil of Turpentine,
4 grms. Copper Oxide,	7 grms. Potassium Bichromate,	115 grms. Zinc, granulated.

REMEMBER OUR DISCOUNT.

**10216/1 APPARATUS FOR COOLEY'S GUIDE TO ELEMENTARY CHEMISTRY,****Sufficient for a class of 12. By Teachers, No. 1. By Students, No. 2.**

No.		No. 1.	No. 2.
2624	Heil's Balance, 60 grms., no case.....	\$11 00	
2624/2	Ditto, ditto, with case.....	22 00	
2700	Hand Scales, pans 6 cm. diameter.....	1 55	$\frac{1}{2}$ dozen, \$9 30
10063/3	Weights, 20 gm. to 1 centigr., in block....	65	$\frac{1}{2}$ dozen, 3 90
10063/1	Ditto, ditto, good grade, 50.0 to 0.001 gm., in box with cover.....	3 30	$\frac{1}{2}$ dozen, 19 80
4790	Cylinders on foot, lip, 25 cc. to $\frac{1}{8}$ ..... 2.....	88	1 dozen, 5 28
9110	Test-tube, 160x16/17 mm..... 1 dozen,	44	1 gross, 4 54
9115	Side Neck Test-tube, German, 160x16/17 mm..... 2.....	22	1 dozen, 1 05
9122	Ditto, ditto, ditto, hard glass, 160 mm..... 2.....	38	1 " 2 28
7250	Mortar and Pestle, porcelain, glazed, $8\frac{1}{2}$ cm. 1.....	50	$\frac{1}{2}$ " 3 00
8040	Support for 13 Test-tubes, with drying points 1.....	75	1 " 8 50
4125	Clamp for 8862, small, with fastener..... 1.....	1 00	1 " 12 00
5305	Side Neck Flask, round bottom, 125 cc..... 2.....	62	1 " 3 72
5305	Ditto, ditto, 250 cc..... 1.....	44	1 " 5 28
5245	Erlenmeyer Flasks, 250 cc..... 2.....	50	1 " 3 00
5245	Ditto, ditto, 500 cc..... 4.....	1 40	1 " 4 20
8700	Soft Rubber Stoppers, 2 holes, size to fit the 250 cc. flasks No. 5245..... 2.....	32	2 " 3 20
8700	Soft Rubber Stoppers, 2 holes, for 500 cc. flasks..... 4.....	1 00	1 " 2 55
8700	Soft Rubber Stoppers, size to fit side neck flasks..... 2.....	32	1 " 1 60
6770	Alcohol Lamp, 200 cc., or Bunsen Burner No. 3740..... 1.....	55	1 " 6 60
5481/1	Glass Funnel, German, long thin stem, 8 cm..... 1.....	27	1 " 3 00
3250	Wide mouth Bottles, 350 cc..... 1.....	11	1 " 1 03
3250	Ditto, 180 cc..... 1.....	07	1 " 68
5400	Forceps, steel, plain, 11 cm..... 1.....	14	1 " 1 50

**10216/1 APPARATUS FOR COOLEY'S GUIDE TO ELEMENTARY CHEMISTRY.**

(Continued.)

		No. 1.	No. 2.
4960	Porcelain Dishes, R. B., 9 cm. diameter.....2	\$0 80	1 doz. \$4 80
9565	Chloride Calcium Tubes, 1 bulb, 15 cm. ....1	14	1 " 1 68
4141	Pinch-cocks, Mohr's, small .....1	14	1 " 1 68
9780	Glass Tubing, 4.7 mm. outside diameter . 450 grms.	63	900 grms. 1 25
9830	Rubber Tubing, black, 4.7 mm. ....90 cm.	48	540 cm. 2 70
9815	Ditto, ditto, 6 mm., white .....90 cm.	33	360 cm. 1 20
9210	Chem. Thermometer, to 212° F.....1	155	3 4 65
5080	Triangular File, 12.7 cm.....1	25	3 75
	Pan, agate ironware, 20 cm. diameter, straight sides.....1	65	1 dozen 7 50
5175/1	Filter Paper.....25 sheets,	52	100 sheets 2 08

Complete set without balances and weights .....	\$15 40	\$101 30
Packed ready for shipment .....	16 30	104 90
Complete set with balances and weights .....	53 90	134 30
Packed ready for shipment .....	50 50	138 00

**10217 CHEMICALS REQUIRED FOR ILLUSTRATION OF COOLEY'S  
GUIDE TO ELEMENTARY CHEMISTRY,****Sufficient for a class of 12. By Teachers, No. 1. By Students, No. 2.**

	No. 1.	No. 2.
Acetic Acid, chem. pure.....450 grms.,	\$0 33	900 grms. \$0 66
Alcohol .....500 cc.	64	1 lit. 1 28
Alum .....(paper) 225 grms.	10	675 grms. 15
Ammonium Carbonate, c. p. ....450 "	53	900 grms. 1 06
Ammonium Chloride, c. p. ....450 "	30	675 grms. 45
Ammonium Hydrate, 16° Be .....450 "	23	1.8 kilos 40
Ammonium Nitrate, cryst. ....225 "	20	675 grms. 57
Antimony Chloride, solution.....115 "	10	225 " 14
Arsenious Oxide, chem. pure .....60 "	15	340 " 40
Barium Chloride, c. p. ....115 "	12	450 " 33
Bismuth Nitrate, cryst., c. p. ....115 "	91	340 " 2 60
Bone Black .....115 "	10	450 " 13
Bromine .....30 "	33	30 " 33
Calcium Chloride, crude .....450 "	16	900 " 32
Calcium Chloride, cryst., c. p. ....115 "	12	225 " 20
Calcium Oxide, quick lime .....115 "	10	225 " 10
Carbon Pencils, Electr. light, 6 mm. diam., 10cm. long .....5 —	30	15 — 75
Chrome Alum .....115 grms.	10	450 grms. 17
Cobalt Nitrate, pure .....30 "	33	115 " 1 13
Cochineal .....(paper) 30 "	13	225 " 40
Copper, pure foil .....(paper) 225 "	50	450 " 1 00
Copper Wire No. 18, naked .....115 "	22	115 " 22
Copper Wire No. 18, single cotton covered (paper) 115 "	30	115 " 30
Copper Wire No. 20, single cotton covered (paper) 115 "	34	115 " 34
Copper Chloride .....60 "	26	225 " 37
Copper Sulphate, c. p. ....225 "	24	675 " 70
"Dutch Metal," imitation gold leaf. ....(paper) 1 book,	16	1 book 16
Ferrous Sulphate, pure .....225 grms.	10	675 grms. 17
Ferrous Sulphide, sticks .....(paper) 450 grms.	33	1.35 kilos 1 00
Hydrochloric Acid, absolutely pure and conc. ....2.7 kilos	72	5.4 kilos 1 44
Iodine, resublimed.....30 grms.	47	60 grms. 93
Lead Acetate .....(paper) 450 grms.	24	675 grms. 36
Litmus Cubes .....(paper) 30 grms.	13	60 grms. 20
Magnesium Ribbon.....(paper) 60 cm.	10	180 cm. 30
Magnesium Chloride, cryst., c. p. ....115 grms.	15	340 grms. 30
Magnesium Sulphate, c. p. ....115 grms.	15	340 grms. 25
Manganese Dioxide Powder, 85 per ct. ....(paper) 225 grms.	10	675 grms. 24
Manganese Sulphate, pure, cryst. ....115 grms.	27	225 grms. 30
Mercury .....450 grms.	10	900 grms. 20
Mercury, redistilled .....2.25 kilos	6 25	2 25 kilos 6 25
Mercuric Bichloride (corr. subl.) .....225 grms.	93	450 grms. 1 57
Mercuric Oxide, red .....60 "	30	450 grms. 1 88
Mercuric Chloride .....30 "	13	115 grms. 40

# 10217 CHEMICALS REQUIRED FOR ILLUSTRATION OF COOLEY'S GUIDE TO ELEMENTARY CHEMISTRY—(Continued.)

REMEMBER OUR DISCOUNT.

		No. 1.	No. 2.
Nitric Acid, absolutely pure and conc.....	900 grms.	\$0.45	3.15 kilos \$1 31
Oxalic Acid, cryst., c. p.....	115 "	25	450 grms. 53
Paraffine.....	(paper) 450 "	28	450 " 28
Phosphorus.....	60 "	64	60 " 64
Potassium.....	4 "	47	4 " 47
" Bromide, c. p.....	115 "	47	450 " 1 33
" Carbonate, c. p., reagent.....	115 "	27	450 " 73
" Chromate.....	115 "	15	340 " 35
" Chlorate, cryst.....	115 "	12	450 " 26
" Dichromate.....	(paper) 115 "	12	450 " 27
" Ferrocyanide.....	(paper) 115 "	15	450 " 46
" Iodide.....	115 "	1 33	340 " 3 10
" Nitrate, cryst., c. p.....	115 "	15	450 " 40
" Sulphate, cryst., c. p.....	115 "	17	450 " 47
Platinum Foil, 2½x1¼ cm., 1/27 mm.....	(paper) 2 pieces	1 00	6 pieces 3 00
Platinum Wire, medium, No. 29.....	(paper) 7.5 cm.	27	60 cm. 1 96
Pyrogallic Acid.....	(in tins) 30 grms.	39	90 grms. 1 17
Silver Nitrate, cryst.....	60 "	1 44	115 " 2 80
Sodium.....	30 "	20	90 " 53
Sodium Borate.....	(paper) 225 "	12	450 " 19
Sodium Carbonate, c. p., anhydrous.....	225 "	34	450 " 67
Sodium Hydrate, c. p. by alcohol.....	225 "	66	450 " 97
Sodium Nitrate, purified.....	115 "	10	450 " 27
Sodium Sulphate, c. p., cryst.....	115 "	13	450 " 33
Strontium Chloride.....	60 "	10	225 " 27
Strontium Nitrate, c. p., reagent.....	115 "	40	450 " 1 20
Sulphur, flour.....	(paper) 115 "	10	450 " 13
Sulphur, roll.....	(paper) 450 "	13	450 " 13
Sulphuric Acid, absolutely pure and conc.....	4 05 kilos	1 17	8.1 kilos 2 34
Tartaric Acid, cryst.....	115 grms.	27	450 grms. 55
Tin, granulated, pure.....	(paper) 225 grms.	60	675 grms. 1 50
Zinc, sheet.....	(paper) 450 grms.	27	450 grms. 27
Zinc, granulated.....	(paper) 450 grms.	29	450 grms. 29
Logwood Chips.....	(paper) 450 grms.	13	450 grms. 13
Potassium Hydrate, pure by alcohol.....	225 grms.	50	450 grms. 90
<b>Set.....</b>		<b>\$31 40</b>	<b>\$60 55</b>
<b>Bottles extra.....</b>		<b>6 70</b>	<b>9 80</b>
<b>Set, including bottles.....</b>		<b>38 10</b>	<b>70 35</b>
<b>Packed ready for shipment.....</b>		<b>40 00</b>	<b>73 50</b>

## 10218/1 APPARATUS AND CHEMICALS REQUIRED FOR REMSEN'S BRIEFER COURSE OF CHEMISTRY.

### Apparatus.

1 set Gramme Weights, 20.0 to 0.01, in block, No. 10063/3.....	\$ 0 65	1 Mohr's Burette, 25 cc. in 1/10 cc., complete.....	\$1 25
1 pair Hand Scales, No. 2710, 13 cm. beam.....	75	6 Arsenic Tubes, No. 2450.....	30
12 Test Tubes, 130x15 mm.....	38	1 nest plain Beakers, No. 2940, No. 1 to 5.....	87
1 Test Tube Stand, No. 8920.....	35	1 U Tube, No. 9715, 10 cm.....	17
1 Bunsen Burner.....	55	1 Burette Support, No. 8760, with 1 clamp.....	1 00
1 hecto German Glass Tubing.....	15	15x15 cm. Steel Wire Gauze.....	12
1 Triang. File, 12.7 cm.....	25	1 Crucible, D.....	09
1 Round File, 12.7 cm.....	25	1 Deflagrat. Spoon, No. 8580.....	25
2 Bunsen's Cells, 1 lit.....	3 90	1 Glass-stoppered Retort, 60 cc.....	25
2 Wire Clamp Supports, No. 8085.....	2 40	6 Florence Flasks, 1, 125 cc.; 2, 200 cc.; 2, 250 cc.; 1, 350 cc.....	1 22
1 Porcel. Mortar, 8½ cm. and pestle, No. 7250.....	50	1 set Cork Bore's of brass, 6 in set.....	1 33
1 Horseshoe Magnet, 8 cm.....	15	1 Gasometer Tube, 25 cc. in 1/10.....	95
2 Watch-glasses, 50 mm.....	06	2 Funnel Tubes, No. 5540, 30 and 35 cm.....	27
2 Porcel. Dishes, No. 4972, 1 each, 7 cm. and 8½ cm.....	44	2 dozen assort. Corks, No. 3 to No. 8.....	16
1 Iron Tripod, No. 9450.....	30	1 Quire Filter Paper, No. 5175/1.....	50
		1 Meas. Cylinder, 25 cc., No. 4790.....	44



# 10218/1 APPARATUS AND CHEMICALS REQUIRED FOR REMSEN'S BRIEFER COURSE OF CHEMISTRY—(Continued.)

## Apparatus.

15 cm. Platin. Wire, No. 29 .....	\$0 55	60 cm. Rubber Tubing for Connect.,	
2½x2½ cm. Platinum Foil, 27 mm. ....	1 00	assorted .....	\$0 30
1 Jewelers' Blow-pipe, 20 cm. ....	13	30 cm. Combustion Tubing .....	23
90 cm. Gas Rubber Tubing, No. 9815,		1 Wulf's Bottle, 3 neck, 250 cc. ....	60
6 mm. ....	33	1 each Funnel, 5 and 9 cm. ....	35

## Chemicals.

225 grms. Roll Sulphur, in box.....	\$0 14	225 grms. Hydrochlor. Acid, gl. st.	
115 grms. granul. Tin, in box .....	37	bottle .....	\$0 30
115 grms. Potass. Chlorate, in box..	14	225 grms. Nitric Acid, gl. st. bot...	30
450 grms. Mangan. Dioxide, in box	21	450 grms. Sulphuric Acid, gl. st. bot.	35
30 grms. Phosphorus, in can.....	32	225 grms. Copper Foil .....	50
4 grms. Sodium, in bottle.....	17	2 grms. Magnesium Ribbon.....	15
4 grms. Potassium, in bottle.....	54	115 grms. Magnesium Sulphate, box	14
450 grms. granul. Zinc, in bulk .....	30	60 grms. Barium Chloride, box.....	14
115 grms. Calcin. Gypsum, in box..	14	30 grms. Iodine, resublimed, gl. st.	
115 grms. Sodium Sulphate, in box	14	bot. ....	59
115 grms. Calcium Chloride, bottle..	20	60 grms. Strontium Nitrate, bottle..	19
115 grms. Potass. Permangan., bottle	27	115 grms. Potass. Sulphate, box .....	14
115 grms. Caust. Soda, purif., bottle	37	30 grms. Litmus, box .....	13
115 grms. Caust. Ammonia, bottle..	25	1 Sheet each of Blue and Red Lit-	
115 grms. Ammon. Chloride, box.....	14	mus Paper .....	10
115 grms. metallic Lead, box .....	14	115 grms. Sodium Carbon., calcined,	
115 grms. Ammon. Nitrate, bottle..	20	purif., box .....	14
115 grms. white Arsenic, bottle .....	20	115 grms. Bleach Powder, bottle.....	20
115 grms. Fluorspar., powd., box.....	14	115 grms. Ammon. Carbonate, bottle	20
60 grms. Potass. Bromide, bottle.....	26	60 grms. Sodium Phosphate, cryst.,	
30 grms. Potass. Iodide, bottle .....	43	bottle .....	19
675 grms. Iron Sulphide, box .....	34	60 grms. Mercury, bottle .....	34
60 grms. Lead Nitrate, box .....	14	115 grms. Alum, box .....	14
30 grms. red Phosphorus, bottle .....	39	115 grms. Potass. Bichromate, box.	14
115 grms. Caust. Potassa., bottle.....	37	30 grms. metallic Bismuth, box .....	34
115 grms. met. Antimony, box .....	20	115 grms. Minium, box .....	14
60 grms. Tartar Emetic, powd., bottle	25	115 grms. Litharge, box .....	14
115 grms. Borax, box .....	14	30 grms. Lead Peroxide, comm., bot.	20
115 grms. fine Iron Filings, box.....	14	115 grms. Copper Sulphate, box .....	14
115 grms. Carbon Disulphide, bottle.	18	2 boxes for packing .....	90

**\$36 15**

# 10219 LIST OF THE MOST NECESSARY APPARATUS FOR QUAL- ITATIVE AND QUANTITATIVE ANALYSIS,

**As used by the School of Mines.**

This compilation will be found a great help in making out orders.

Flasks, 35 cc., Bohemian.	Glass Tube Caliper,	Plain Beakers, 140 cc.
" 125 cc., "	No. 3920, 7½ cm.	Ditto, ditto, 225 cc.
" 200 cc., "	Glass Rod Caliper, No. 8201.	Ditto, ditto, 325 cc.
" 250 cc., "	Bottles, corked, wide-	Ditto, ditto, 475 cc.
" 360 cc., "	mouthed, 30 cc.	Test Tubes, 10 cm.
" 750 cc., "	Ditto, ditto, ditto, 125 cc.	Test Tubes, 16 cm.
" 1000 cc., "	Ditto, ditto, ditto, 180 cc.	Ditto, ditto, 20 cm.
" 1500 cc., "	Ditto, ditto, ditto, 250 cc.	Thistle Tube, 25 cm. long.
Funnels, 4 cm., "	Ditto, ditto, for alcohol,	Flat Covers, 7½, 10, 13 and
" 7 cm., "	500 cc.	15½ cm.
" 8 cm., "	Bottles, glass-stoppered, nar-	Piece of Blue Glass, 10 ctm.
" 11 cm., "	row mouth, 15 cc.	square.
" 13 cm., "	Ditto, ditto, ditto, 30 cc.	Wash Bottle, 125 cc.
" 16 cm., "	Ditto, ditto, ditto, 250 cc.	Ditto, ditto, 350 cc.
" 19 cm., "	Plain Beakers, nests of	Ditto, ditto, 500 cc.
" 21 cm., "	five, (Nos. 1 to 5).	Ditto, ditto, 1000 cc.
Watch Glasses, 5 cm.	Ditto, ditto, 90 cc.	Flasks, 2 liters, Bohemian.

# 10219 LIST OF THE MOST NECESSARY APPARATUS FOR QUALITATIVE AND QUANTITATIVE ANALYSIS—(Continued.)

Flasks, 50 cc., Bohemian, graduated.	Pipettes, 100 cc.	Retort, 1 liter, tub.
Flasks, 100 cc., Bohemian, graduated.	Burette, Gay Lussac, 50 cc., in tenths.	Ditto, 2 liters, tub.
Flasks, 200 cc., Bohemian, graduated.	Convex Covers, 76 mm.	Ditto, 4 liters, tub.
Flasks, 250 cc., Bohemian, graduated.	Convex Covers, 89 mm.	Ditto, 8 liters, tub.
Flasks, 1/2 liter, Bohemian, graduated.	Ditto, ditto, 127 mm.	Measuring Cylinder, 10 cc.
Flasks, 1 liter, Bohemian, graduated.	Ditto, ditto, 152 mm.	Lipped Beakers, nests of six, Nos. 1 to 6.
Flasks, Specific Gravity.	Ditto, ditto, 178 mm.	Lipped Beakers, No. 1, 150 cc.
Flasks, parting, 125 cc., straight neck.	Glass Scale Pan with handle.	Ditto, ditto, No. 2, 250 cc.
Flasks, 60 cc., wide-mouthed.	Combustion Tubing, 1 meter long.	Ditto, ditto, No. 3, 375 cc.
Ditto, Erlenmeyer, 500 cc.	Calcium Chloride Tube, small, bent.	Ditto, ditto, No. 4, 600 cc.
Ditto, ditto, 250 cc.	Funnel Tube, stop-cock, 60 cc.	Ditto, ditto, No. 5, 800 cc.
Pipettes, 10 cc.	Ignition Bulb Tube.	Ditto, ditto, No. 6, 1100 cc.
Ditto, 25 cc.	Specimen Tubes, 80 mm.	Desiccators, covered.
Ditto, 50 cc.	U Tubes, 8, 10, 13 cm.	Glass Mortar and Pestle.
	Ditto, 15 cm.	Thermometer.
	Ditto, 18 cm.	U Tubes, with side tubes.
	Ditto, 30 cm.	Liebig's Potash Bulb.
	Retort, 1/2 liter, tub.	Bulbed Calcium Chloride Tube.
		Glass Balloons for weighing gases.

## Porcelain.

Porcelain Mortar and Pestle, 13 cm.	Porcelain Evaporating Dishes, No. 5.	Porcelain Casseroles, Berlin Porcelain, 10 1/4 cm.
Porcelain Evaporating Dishes, nest of six.	Ditto, ditto, No. 6.	Ditto, ditto, 13 1/4 cm.
Ditto, ditto, No. 1.	Ditto, ditto, 19 1/2 cm.	Ditto, ditto, 16 1/2 cm.
Ditto, ditto, No. 2.	Ditto, ditto, 23 1/2 cm.	Porcelain Crucibles, Royal Berlin, 37 mm., No. 00.
Ditto, ditto, No. 3.	Ditto, ditto, 26 cm.	Ditto, ditto, 46 mm., No. 1.
Ditto, ditto, No. 4.	Ditto, ditto, 28 1/2 cm.	Ditto, ditto, 56 mm., No. 2.
	Ditto, ditto, 9 1/2 cm.	

## Paper.

Package Cut Filters, 7 and 7 1/2 cm.	Sheets Swedish Filter Paper, No. 1F.	and No. 588; 5 1/4, 7, 9, 11, 12 1/4, 15 and 18 1/2 cm.
Ditto, ditto, 10 and 11 cm.	Swedish Filtering Paper, cut, Nos. 00, 0, 1F, 2, 3 and 100; 5 1/2, 7, 9, 11, 12 1/4, 15, 18 1/2 cm.	Sheets German Filter Paper, S. & S.
Ditto, ditto, 12 1/2 cm.	S. & S. Filtering Paper, No. 595, 597, 589, 590, 575, 604	Sheets Glazed Paper.
Ditto, ditto, 15 cm.		Note Book.
Ditto, ditto, 20 cm.		Box of Gummed Labels.
Ditto, ditto, 25 cm.		
Ditto, ditto, 33 cm.		

## Metal.

Ring Stands, 3 rings.	Wing-top for Bunsen Burner.	Platinum Triangle.
File, Triangular, 12.7 cm.	Lead Dish.	Platinum Crucible, with cover.
File, Rat-tail, 12.7 cm.	Water Baths, 15 cm.	Platinum Dish.
Steel Forceps, 10 cm.	Watch Glass Clip.	Gas Stove, No. 8731.
Steel Forceps, bent, nickel-plated.	Sand Baths, tin, 15 cm.	Gas Burner, Fletcher's No. 3850.
Wire Triangles.	Set of four zinc Filter Patterns.	Gas Burner, with rings, No. 3853.
Ditto, ditto, covered.	Platinum Foils, 8 cm. x 4 cm.	Tube Clamp.
Scissors.	Platinum Wire, fine, 60 centimeters.	Riders for Balance.
Pieces Wire Gauze, 10 cm.		Blow-pipe.
Bunsen Burners.		
Ditto, ditto, with crown top.		

## Sundries.

Filter Stands, No. 8855.	Rubber Stoppers, with holes, Nos. 3 1/2 to 7.	Test-tube Brushes, sponge end.
Ditto, ditto, Fresenius.	Rubber Stoppers, with holes, large.	Tube Cleaners.
Test-tube Racks.	Test Tube Cleaners, sponge end.	Clay Chimneys.
Test-tube Holder.	Horn Spatulas, 12 and 14 cm.	Platinum Chloride.
Rubber Tubing, black, 3 mm.	Towels.	Bottle for same.
Ditto, ditto, 4.7 mm.		Argentite Nitrate, crystals.
Ditto, white, 6 mm., extra heavy.		Bottle for same.
		Reagent Bottles on laboratory desk.

REMEMBER OUR DISCOUNT.

# 10219 LIST OF THE MOST NECESSARY APPARATUS FOR QUALITATIVE AND QUANTITATIVE ANALYSIS—(Continued.)

## Assay (Special).

Reagent Bottles in Assay Laboratory.	Iron Mortar, 2 liters.	French Crucible Covers, No. 6.
Ring stand.	Steel Forceps, bent, nickel-plated.	French Crucible Covers, No. 8.
Filter Stand, Fresenius.	Bunsen Burner.	Hessian Crucibles, single out-sides of fives.
Convex Covers, 8.9 cm.	Rubber Tubing for same.	Hessian Crucibles, nests, sixes.
Parting Bottles, 250 cc.	Towel.	Hessian Crucibles, nests, eights.
Parting Flasks, 125 cc., conical.	Sand Bath.	Hessian Crucible Covers, fives.
Funnel, 7 cm.	Package Cut Filters, 11 cm.	Hessian Crucible Covers, sixes.
Nest of 6 lipped Beakers.	Pure Silver.	Hessian Crucible Covers, eights.
Glass Rod.	Horn Spatula, 20 cm.	Lead Assay Crucibles.
Wash bottle, 350 cc.	Horn Spoon, 24 cm.	Lead Assay Crucible Covers.
Bottles, corked, wide-mouthed, 125 c. c.	Hand Scales, with horn pans.	Assay Balance.
Bottles, corked, wide-mouthed, 250 cc.	Common Brush.	Set of Weights with Forceps.
Porcelain Capsules, 5 cm.	Annealing Cups.	
Porcelain Mortars, 20 cm.	Scorifiers, 77 mm.	
Box of gummed Labels.	Roasting Dishes, 77 mm.	
Sheets of Glazed Paper.	Roasting Dishes, 102 mm.	
Roasting Dishes.	French Crucibles, No. 5.	
Iron Tray.	French Crucibles, No. 6.	
	French Crucibles, No. 8.	
	French Crucible Covers, No. 5.	

## 10220

## SET OF REAGENTS,

All chemically pure, in 72 handsome glass-stoppered bottles, according to Fresenius.

125 cc. of each, except of Platinic Chloride, of which 30 cc. is furnished, and Sodium Palladio-Chloride, of which 15 cc. is given.

Packed in case, with lock and key, complete.....	\$50 00
The Reagents in bottles, without case .....	30 00

## 10221

## SET OF REAGENTS.

Same as No. 10220, but double the quantity.

Packed in case, with lock and key, complete .....	\$66 00
The Reagents in bottles, without case .....	45 00

## 10223 SET OF APPARATUS AND REAGENTS FOR BLOW-PIPE ANALYSIS.

In neat polished cherry wood case, containing:

Plattner's nickel-plated Blow-pipe with platinum jet.	8 cm. Platinum Wire, No. 29.
1 pr. steel Forceps.	Platinum Foil, 2½ x 5 cm., .0375 mm.
	10 Blow-pipe Reagents.

Complete.....	\$8 00
Complete, but without Platinum Wire and Foil.....	6 00

10223/1—Polished Cherry Wood Case for No. 10223, alone.....	\$1 50
---	--------

## 10226 SET OF APPARATUS AND REAGENTS FOR BLOW-PIPE ANALYSIS.

Same as No. 10223, with the addition of:

Agate Mortar, 50 mm.,	5 30 cc. glass-stoppered bottles, containing:
Blow-pipe Hammer No. 6035,	C. P. Sulphuric Acid,
Steel Anvil No. 1270,	C. P. Nitric Acid,
3 pieces Charcoal,	C. P. Hydrochloric Acid,
12 pieces Glass-tubing, 20 cm. long,	Ammonium Hydrate,
Alcohol Lamp, No. 6781, 60 cc.	Solution of Cobaltous Nitrate.

The whole packed, complete, including Platinum Wire and Foil .....	\$14 00
The whole packed in a neat polished wooden case.....	20 50

# 10230 SET OF APPARATUS AND REAGENTS FOR BLOW-PIPE ANALYSIS, \$21.50.

Packed ready for shipment.....\$23 00  
In polished mahogany case, for traveling.....56 00

Nickel-plated Plattner's Blow-pipe with solid platinum jet,  
Nickel-plated Hammer No. 6045,  
Steel Anvil No. 1270.  
1 pr. steel Forceps, 10 cm.,  
Test-tube Brush, sponge end,  
Tripod, No. 9450,  
Charcoal Borer, square, with wooden handle,  
Wooden Test-tube Holder,  
7.5 cm. Platinum Wire, No. 26,  
Platinum Foil,  $2\frac{1}{4} \times 5$  cm.,  $1/27$  mm.,  
4 pieces Charcoal,  
Alcohol Lamp, No. 6781, 60 cc.,  
Glass Funnel, 5 cm.,  
2 Flasks, 60 and 125 cc.,  
Graduate, 1 oz.,  
Graduated Cylinder, 25 cc.,  
6 Test-tubes,  $130 \times 15$  mm.,  
Test-tube Rack, No. 8925,  
4 Watch-glasses, 50 mm.,  
4 Stirring rods, 20 and 25 cm.,  
2 Glass Plates, ordinary thickness,  $7\frac{1}{4}$  cm. square,  
Small straight Pipette, No. 7600, 15 cm.,  
Pipette with bulb, about 15 cc.,  
Agate Mortar, 50 mm.,  
2 Royal Berlin Evaporating Dishes, 50 cc. and 80 cc.,  
Meissen Crucible with cover, No. 6,  
Small book of 36 sheets blue Litmus Paper,  
Small book of 36 sheets red Litmus Paper,  
Box of Curcuma,  
2 boxes blank Labels,  
6 Specimen Tubes, No. 9676,  $120 \times 15$  mm.,  
225 grms. c. p. Sulphuric Acid in gl. st. bot.,  
175 grms. c. p. Nitric Acid in gl. st. bot.,

115 grms. c. p. Hydrochloric Acid in gl. st. bot.,  
115 g ms. c. p. Acetic Acid in gl. st. bot.,  
115 grms. Ammonium Hydrate in gl. st. bot.,  
30 grms. Ammonium Sulphide in gl. st. bot.,  
60 cc. Solution Ammonium Oxalate in gl. st. bot.,  
60 cc. Solution Argentic Nitrate in gl. st. bot.,  
60 cc. Solution Barium Chloride in gl. st. bot.,  
60 cc. Solution Calcium Hydrate in gl. st. bot.,  
60 cc. Solution Ferrous Sulphate in gl. st. bot.,  
60 cc. Solution Ferric Chloride in gl. st. bot.,  
60 cc. Solution Lead Acetate in gl. st. bot.,  
60 cc. Solution Mercuric Chloride in gl. st. bot.,  
60 cc. Solution Potassium Hydrate in gl. st. bot.,  
60 cc. Solution Potassium Ferrocyanide in gl. st. bot.,  
60 cc. Solution Potassium Ferricyanide in gl. st. bot.,  
11 Paste-board Boxes, containing the following reagents:  
Borax, Dry Sodium Carbonate,  
Plattner's Flux, Copper Oxide,  
Bismuth Flux, Potassium Nitrate,  
Fluor Spar, Calcium Sulphate,  
Silicic Acid, Tin Foil,  
Microcosmic Salt,

REMEMBER OUR DISCOUNT.

# 10236 SET OF APPARATUS AND REAGENTS FOR QUALITATIVE AND QUANTITATIVE BLOW-PIPE ANALYSIS.

In polished mahogany box.

Plattner's Balance, No. 2680.....\$ 17 65  
Mohr's Specific Gravity Balance, No. 2690.....17 65  
Set Weights of Precision, 1 Platinum grm to  $\frac{1}{16}$  mgrm., No. 9951.....9 00  
Nickel-plated Plattner's Blow-pipe with solid platinum jet.....2 80  
Nickel-plated Plattner's Blow-pipe Lamp with patent swivel.....5 30  
1 pr. brass Forceps, curved, nickel-plated, No. 5416.....30  
1 pr. steel Forceps, No. 5400, 12 cm. 20  
1 pr. nickel-plated goose-neck Forceps No. 5406.....65  
1 pr. nickel-plated steel Forceps with platinum points, French style.....3 35  
1 pr. Plattner's Forceps with platinum points.....2 65  
Nickel-plated Hammer with wire handle, No 6045.....95

Plattner's Hammer, No. 6035.....\$0 75  
Anvil and Mortar combined.....2 25  
Matrass Holder.....35  
Holder for platinum wire.....1 00  
6 Platinum Wires, 5 cm. each, No. 26.....1 50  
Platinum Foil,  $2\frac{1}{4} \times 5$  cm.,  $\frac{1}{27}$  mm.....2 00  
Charcoal Borer, club-shaped.....80  
Magnet with borer.....55  
Charcoal Borer with spatula.....62  
Charcoal Borer, square.....54  
12 pieces Charcoal.....80  
Triangular File,  $7\frac{1}{2}$  cm.....15  
1 hecto Glass-tubing.....15  
12 Matrasses.....50  
Double Magnifying Lens, 25 mm., No. 7015.....83  
Coddington's Lens, No. 7040, 15 mm. 1 25  
4 pieces colored Glass,  $7\frac{1}{2} \times 10$  cm.....80  
Alcohol Lamp, No. 6775, 125 cc.....65  
2 Royal Berlin Evaporating Dishes, 50 cc.....45

# 10236 SET OF APPARATUS AND CHEMICALS FOR QUALITATIVE AND QUANTITATIVE BLOW-PIPE ANALYSIS—(Continued.)

1 Royal Berlin Evaporating Dish, 80 cc. ....	\$0 25	Test-lead Sieve, No. 8360.....	\$1 25
1 brass Mixing Capsule, gilt.....	55	1 doz. hard glass tubes.....	40
1 horn Mixing Capsule.....	18	1 doz. watch glasses, 50 mm. ....	30
2 Ivory Spoons.....	60	½ book Gold Foil.....	50
Platinum Spoon, 9 mm. cup.....	2 48	27 neat 30cc. glass stoppered bottles, filled with the following re-agents:	
Form for paper cylinders.....	15	Sodium Carbonate,	
Test-lead Measure.....	60	Borax,	
Cupel Holder with 2 moulds and a stamp.....	1 90	Sodium and Ammonium Phosphate,	
Charcoal Holder with platinum shield and ring.....	4 50	Potassium Oxalate,	
Holder of clay for crucibles, etc.....	35	Nickel Oxalate,	
1 pr. Button Pliers, No. 7752, 12 cm. ....	65	Copper Oxide,	
Assay Button Brush.....	62	Test Lead,	
Agate Mortar, 65 mm. ....	3 45	Tin Foil,	
Camel-hair Brush, swan quill.....	15	Graphite,	
Charcoal Saw.....	37	Starch,	
1 doz. Clay Capsules.....	35	Bone-ash,	
1 doz. Clay Crucibles.....	35	Plattner's Flux,	
1 doz. Charcoal Capsules.....	38	Potassium Nitrate,	
1 doz. Charcoal Crucibles.....	38	Potassium Bisulphate,	
½ doz. Coal Squares with covers.....	1 10	Fused Boracic Acid,	
Holder for evaporating dish with ring and triangle.....	2 65	Calcium Fluoride,	
Cobalt Bottle, No. 3220, 30 cc. ....	43	Solution of Cobalt Nitrate,	
Anvil, No. 1270.....	62	Granulated Zinc,	
Blow-pipe with bulb, No. 3095, 25 cm. ....	28	Bismuth Flux,	
1 nest of 2 Plattner's Meissen porcelain Capsules, No. 3965.....	56	Carbonate of Ammonia, powd.,	
Meissen Crucible, No. 4670.....	25	Cyanide of Potassium,	
1 nest of 3 Plattner's porcelain Capsules, No. 3960.....	31	Iodide of Potassium,	
Dana's Hammer, No. 6065, 400 grms. ....	1 50	Iron Wire, 1¼ cm. pieces,	
Holder for chimney, No. 6100.....	2 00	Metallic Arsenic,	
Horseshoe Magnet, 10 cm. ....	20	Chloride of Sodium, dry,	
Plattner's Diamond Mortar, No. 7220.....	4 50	Chloride of Silver, 7 grms.	
Mould of brass for clay crucibles, No. 7285.....	5 35	Silicic Acid. Together.....	10 00
Moulds for square coal and cover, with 2 stamps, No. 7270.....	5 60	4 neat 60 cc. glass stoppered bottles, filled with:	
Mould for coal crucibles, No. 7290.....	62	C. P. Acetic Acid,	
Mould for coal capsules, No. 7280.....	1 00	C. P. Hydrochloric Acid,	
Mould for clay capsules, No. 7276.....	62	C. P. Nitric Acid,	
Cutting Pliers, No. 7780, 12 cm. ....	95	C. P. Sulphuric Acid. Together.....	1 35
2 sheets Soda Paper.....	12	6 small books Litmus Paper, blue, No. 7505/10.....	30
Spatula, No. 8480, 7½ cm. ....	30	6 small books Litmus Paper, red, No. 7505/10.....	30
Plattner's Ivory Scale, for measuring buttons.....	4 00	Together.....	\$142 35
Meissen Streak Plate, No. 7720.....	30	Polished mahogany case for travelling.....	53 65
			<b>\$196 00</b>
		<b>If packed in an ordinary box, only.....</b>	<b>146 00</b>

10237

## SET OF BLOW-PIPE APPARATUS,

As Described in "Brown's Manual of Assaying" and as used in  
Columbia College.

- |   |   |
|---|---|
| 1. 1 set (3) Porcelain Dishes, No. 3960.                  | 8. 1 Charcoal Borer, with spatula.                        |
| 2. 1 Diamond Steel Mortar, No. 7220.                      | 9. 1 pair Scissors, No. 8290, med.                        |
| 3. 1 pair Platinum pointed Forceps, No. 5430, Plattner's. | 10. 1 Platinum Holder, with 6 wires, No. 29, 2¼ cm. long. |
| 4. 1 pair steel Forceps, No. 5410.                        | 11. 1 Plattner's Blow-pipe Lamp, with swivel; No. 6825.   |
| 5. 1 pair steel Forceps, No. 5400, 11 cm.                 | 12. 1 Charcoal Saw, No. 4040.                             |
| 6. 1 steel Chisel, No. 4090, 12.7 cm.                     | 13. 1 Matress Holder, No. 6130.                           |
| 7. 1 Charcoal Borer, club shape.                          |   |

## 10237

## SET OF BLOW-PIPE APPARATUS—(Continued.)

- |   |   |
|---|---|
| 14. 1 Plattner's Blow-pipe, nickel-plated.        | 26. 6 Glass Tubes, 30 cm. each, 6 mm.   |
| 15. 1 Platinum Tip for same.                      | 27. ½ dozen Charcoals.  |
| 16. 1 Steel Hammer with wire handle,<br>No. 6045. | 28. Coal Tray.  |
| 17. 1 set Moulds and Stamps, No. 6110.            | 29. Ash Tray.   |
| 18. 1 pair Nippers, No. 7780, 12 cm.              | 30. 1 small book each red and blue Lit-<br>mus Paper.   |
| 19. 1 Double Lens, No. 7015, 19 mm.               | 31. 1 Ivory Spoon, No. 8610.  |
| 20. 1 Knife, No. 4400.                            | 32. 6 Watch-glasses, 50 mm.   |
| 21. 1 Dropping Pipette, No. 7605.                 | 33. 1 Horn Mixing Capsule, No. 3972.  |
| 22. 1 Camel-hair Brush, No. 3610, 25 mm.          | 34. Frame, with 18-30 cc. glass stoppered<br>and labeled Reagent Bottles, con-<br>taining the following reagents: |
| 23. 12 Matrasses.                                 |   |
| 24. 1 Glass Alcohol Lamp, 125 cc.                 |   |
| 25. 1 Chamois skin, E. J.                         |   |

Test Lead.

Tin.

Phosphorus Salt.

Borax Powder.

Borax Glass.

Boracic Acid, fused.

Boracic Acid, cryst.

Plattner's Flux.

Bismuth Flux.

Carbonate Soda.

Potass. Oxalate.

Salt.

Soda Nitrate.

Charcoal.

Boneash, sieved.

Boneash, washed.

Copper Oxide.

Bisulphate Potass.

Price for the complete set..... \$38 00

Packed in an ordinary box..... 39 00

Packed in a lined Mahogany box..... 75 00

## 10240

## SET OF BLOW-PIPE REAGENTS.

Fifteen bottles, with wooden covers, containing 15 reagents, in wooden  
tray.....

\$ 4 00

## 10241

## SET OF TWELVE BLOW-PIPE REAGENTS,

In Wooden Block.

Per set..... \$ 1 25

All Plattner's Blow-pipe Apparatus man-  
ufactured by August Lingke & Co., Freiberg,  
imported to order at lowest prices.

**\*10245 SET OF APPARATUS AND REAGENTS  
FOR URINARY ANALYSIS.**

On neat black walnut stand..... \$ 6 25

6 Test-tubes,

4 Watch-glasses,

Urinometer, with cylinder,

Brass Alcohol Lamp, 60 cc.

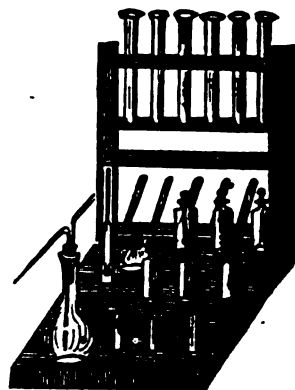
Washing Bottle,

9 glass stoppered Bottles, filled

with chemically pure re-  
agents.

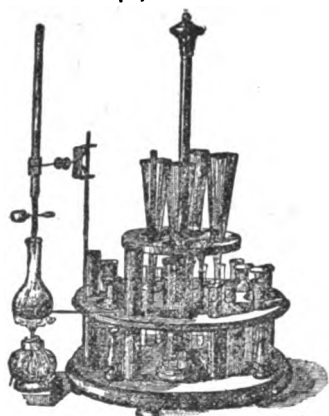
**\*10245/1**—Same set as the foregoing, but without  
the reagents.....

\$ 5 60



10245 &amp; 10245/1

REMEMBER OUR DISCOUNT.

**\*10251 SET OF APPARATUS AND CHEMICALS FOR URINARY ANALYSIS, ROBERTS'.**

10251

**Without Circular Stand** ..... **\$11 50**  
**Arranged on circular stand of two tiers, made of polished wood; a very convenient office set for physicians**..... **21 50**

- |  |   |
|--|---|
| 1 set of Vogel's Urinometers, one ranging from 1.000 to 1.025 and one from 1.025 to 1.050. | 2 glass Funnels, 7 cm.,                                     |
| 1 Urinometer Jar,  | 1 pack cut round Filters, 12½ cm.,                          |
| 4 Urine Test Glasses, conical, with lip, 200 grammes,                                      | Copper Water Bath, 10 cm.,                                  |
| 6 Test-tubes, 16 cm.,  | ½-doz. Watch-glasses,                                       |
| Alcohol Lamp, 60 cc.,  | Cylindrical Thermometer, with paper scale, 15 cm.,          |
| Mohr's graduated Burette with spring clamp, 25 cc.,  | Iron Burette Stand with extra ring to support flask,        |
| 3 small straight Pipettes,   | 5 Bottles with raised labels, 125 cc. capacity, containing: |
| 3 Stirring Rods,   | Acetic Acid,  |
| Graduate, 2 oz.,   | Nitric Acid,  |
| Flask, 125 cc.,  | Fehling's Solution,   |
| 1 box Litmus Paper,  | Ammonium Hydroxide,   |
|  | Potassium Hydroxide.  |

The Burette clamp is not furnished as per illustration, but a separate support No. 8760, is supplied.

**10255 SET OF APPARATUS AND REAGENTS FOR URINARY ANALYSIS. According to Dr. A. Flint, \$13.00.**

**Packed ready for shipment** ..... **\$15 15**  
**In Black Walnut Case, either for traveling or physicians' office; complete**..... **30 00**

- |   |  |
|---|--|
| Alcohol Lamp, No. 6781, 60 cc.,   | 60 cc. c. p. Hydrochloric Acid,                |
| Glass Funnel, 7 cm.,  | 60 cc. c. p. Nitric Acid,                      |
| 2 Flasks, 125 cc. and 250 cc.,  | 60 cc. c. p. Sulphuric Acid,                   |
| Graduate, 1 oz.,  | 60 cc. c. p. Acetic Acid,                      |
| Graduated Cylinder, 100 cc.,  | 60 cc. c. p. fuming Nitric Acid,               |
| Conical Test Glass, 70 grammes,   | 60 cc. Solution of Silver Nitrate, 2 per cent, |
| 3 Watch-Glasses,  | 60 cc. Solution of Copper Sulphate,            |
| 2 Urinometers, 1.000 to 1.025 and 1.025 to 1.050; No. 6415,                   | 60 cc. Solution of Potassium Hydrate,          |
| Cylindrical Thermometer, with paper scale, 15 cm.,                            | 125 cc. Solution of Sodium Hydrate,            |
| 4 Stirring Rods, 20 cm.,  | 60 cc. Solution of Potassium Tartrate,         |
| 2 Glass Plates, 7½ cm. square,  | 60 cc. Ether,                                  |
| Test-tube Rack, No. 8920, with 6 tubes,                                       | 125 cc. Ammonium Hydrate,                      |
| Wooden Test-tube Holder,  | 125 cc. Solution of Sodium Hypochlorite,       |
| Test-tube Brush, sponge end,  | 125 cc. Solution of Sodium Chloride,           |
| 2 Royal Berlin Evaporating Dishes, 50 cc. and 80 cc.,                         | 125 cc. Solution of Sodium Carbonate,          |
| Steel Forceps, 9 cm.,   | 125 cc. Distilled Water,                       |
| Small straight Pipette, No. 7600, 15 cm.,                                     | 30 cc. Alcohol,                                |
| 6 glass-stoppered Reagent Bottles, 125 cc.,                                   | 1 small book each red and blue Litmus Paper,   |
| 10 glass-stoppered Reagent Bottles, 60 cc.,                                   | 1 sheet Turmeric Paper,                        |
| 1 glass-stoppered Reagent Bottle, 30 cc., filled with the following Reagents: | 100 round white Filters, No. 5174, 12½ cm.,    |
|   | Dry Yeast,                                     |
|   | Iron 2-ring Stand.                             |

10256

## SET OF APPARATUS,

To perform all the experiments in Dr. Piffard's "A Guide to Urinary Analysis."

As given in the appendix ..... \$ 106 00

10261/1

## SET OF APPARATUS FOR SACCHARIMETRIC POLARIZATION.

We import this set to order at ..... \$355 65

1 fine Sugar Balance for 300 grms., No. 2624/7 .....	\$35 00	2 graduated Flasks, 50 and 55 cc. ....	\$0 74
1 set Weights, No. 10063/1, 200 grammes to 1 milligramme, in box .....	5 25	2 grad. Flasks, 100 and 110 cc. ....	1 00
1 Sugar Weight, 26.048 .....	1 00	2 Pipettes, 3 cc. ....	30
1 Sugar Weight, 13.024 .....	1 00	1 Pipette, 10 cc. ....	25
1 F. Schmidt & Haensch's Polariscopes, No. 2 (No. 7796), for 200 mm. tube .....	285 35	1 Washing Bottle, 350 cc., No. 3471 .....	56
1 Polarization Tube, 100 mm., No. 7830 .....	1 25	1 Syphon Aspirator Bottle, complete, No. 2484, 1 lit., with rubber stoppers .....	2 00
1 Polarization Tube, 200 mm., No. 7830 .....	1 25	2 Funnels, No. 5475, 8 cm. ....	38
1 Observation Lamp No. 7824/1; No. 6 (or No. 8, for kerosene) .....	13 65	1 Tripod, No. 9455 .....	35
1 doz. wicks for same .....	50	1 Porcelain Mortar, No. 7250, 10 cm. ....	62
1 german silver Sugar Dish, with tare weight, No. 5006 .....	3 75	1 pr. Forceps with Ivory points, No. 5425 .....	75
		½ Quire German Filter Paper, No. 5175/1 .....	25
		2 Cylinders, No. 4770, 15½ x 2½ cm. ....	48

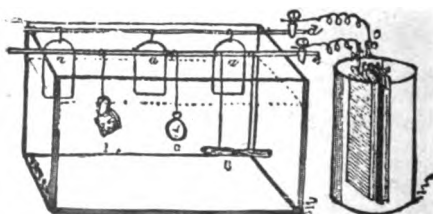
REMEMBER OUR DISCOUNT.

10262—Same set as No. 10261/1 with Polariscopes No. 7797 for 200 mm. tubes, instead of No. 7796. .... \$239 30

10263—Same set as No. 10261/1 with Polariscopes No. 7796/3 for 400 mm. tubes, instead of No. 7796. .... 476 55

\*10265

## APPARATUS FOR ELECTRO-SILVER-PLATING.



10265

Amateur's Outfit ..... \$35 45

2 Smee's Batteries No. 2 .....	\$15 50	1 Book on Electro-Metallurgy .....	\$1 65
1 Glass Jar, 23 cm. long by 20 x 15 cm. ....	1 85	Glass Funnel 13 cm. ....	30
2 Rods with connections .....	1 25	225 grms. Mercury and Bottle .....	80
2 pieces, 3 meters each, Conducting Wire .....	25	Glass Rod .....	20
		Glass Graduate, 125 cc. ....	40
		Scratch Brush .....	1 25



**10265 APPARATUS FOR ELECTRO-SILVER-PLATING—(Continued.)**

Sand Brush .....	\$ 0 60	1 box Crocus .....	\$0 25
Fine Brush .....	60	1 lit. Silver Solution and bottle.....	3 10
3 Assorted Burnishers.....	4 50	1 Silver Anode .....	1 25
450 grms. Hanging Wire .....	75	If a glass jar 28 cm. long by 32 cm.	
1 box Pumice Stone .....	25	x21 cm. is wanted instead of 23x-	
1 box Whiting.....	25	20x15 cm., it will be furnished in	
1 box Rouge .....	50	place of the smaller one at .....	8 25

**10266 APPARATUS FOR ELECTRO-PLATING.****Amateur's Outfit .....**\$29 10

1 Battery, Smee No. 2.....	\$ 7 75	1 Glass Rod .....	\$0 20
1 Glass Jar, 23x20x15 cm.....	1 85	Wire and Connections.....	1 50
Nickel Salt .....	2 25	Polishing Material.....	8 95
Nickel Anodes .....	4 95	Watt's Electro-Metallurgy..	1 65

**10271 APPARATUS FOR NICKEL-PLATING, AMATEUR'S OUTFIT.**

Carbon Battery No. 2.....	\$ 3 30	900 grms. Nickel Salt for solution,	
1 square glass Jar for solution, 15x20		made by dissolving 100 grms. in a	
x23 in.....	1 85	liter of water .....	\$0 95
Connecting Rods and Wire.....	1 50	900 grms. Sulphuric Acid and bottle	60
2 small Nickel Anodes.....	2 20	225 grms. Potassium Bichromate.....	15
		Box for same.....	60

The outer jar of the battery is filled with dilute sulphuric acid, made in the proportion of 20 parts of water to 1 part of sulphuric acid by weight. The porous cup is filled with a solution made in the following manner: 250 cc. of sulphuric acid is gradually added to 1 lit. of water in an earthenware vessel, and while the solution is still hot 115 grms. Potassium Bichromate is dissolved in it.

**Price Packed .....**\$11 15

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